

Fast Ethernet Network Adapter

AT-2711FX

Installation and User's Guide

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Electrical Safety and Emissions Standards

This product meets the following standards.

Federal Communications Commission Interference Statement

Declaration of Conformity

Manufacturer Name: Allied Telesyn, Inc.

Declares that the product: **Fast Ethernet Adapter**

Model Numbers: **AT-2711FX**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device must not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Industry Canada

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

RFI Emissions	FCC Class B, EN55022 Class B, VCCI Class B, C-TICK, CE
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
Immunity	EN55024
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Electrical Safety	EN60950 (TUV), UL 60950 (cUL _{US})
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Laser Safety	EN60825
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Translated Safety Statements


Important: Appendix C contains translated safety statements for installing this equipment. When you see the , go to Appendix C for the translated safety statement in your language.

Wichtig: Anhang C enthält übersetzte Sicherheitshinweise für die Installation dieses Geräts. Wenn Sie  sehen, schlagen Sie in Anhang C den übersetzten Sicherheitshinweis in Ihrer Sprache nach.

Importante: El Apéndice C contiene mensajes de seguridad traducidos para la instalación de este equipo. Cuando vea el símbolo , vaya al Apéndice C para ver el mensaje de seguridad traducido a su idioma.

Important : L'annexe C contient les instructions de sécurité relatives à l'installation de cet équipement. Lorsque vous voyez le symbole , reportez-vous à l'annexe C pour consulter la traduction de ces instructions dans votre langue.

Importante: l'Appendice C contiene avvisi di sicurezza tradotti per l'installazione di questa apparecchiatura. Il simbolo , indica di consultare l'Appendice C per l'avviso di sicurezza nella propria lingua.

Важно: Приложение С содержит переведенную инструкцию по безопасности при установке данного устройства. Если Вы встретите , перейдите к Приложению С для получения переведенной инструкции по безопасности.

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Preface

This guide contains instructions on how to install the AT-2711FX Fast Ethernet adapter. In addition, procedures are provided that describe how to install and configure the software drivers.



The Preface contains the following sections:

- ❑ “Safety Symbols Used in this Document” on page 14
- ❑ “Where to Find Web-based Guides” on page 15
- ❑ “Contacting Allied Telesyn” on page 16

Safety Symbols Used in this Document

This document uses the safety symbols defined in Table 1.

Table 1. Safety Symbols

Symbol	Meaning	Description
	Caution	Performing or omitting a specific action may result in equipment damage or loss of data.
	Warning	Performing or omitting a specific action may result in electrical shock.

Where to Find Web-based Guides

The installation and user guides for all Allied Telesyn products are available in portable document format (PDF) on our web site at **www.alliedtelesyn.com**. You can view the documents online or download them onto a local workstation or server.

Contacting Allied Telesyn

This section provides Allied Telesyn contact information for technical support as well as sales and corporate information.

Online Support

You can request technical support online by accessing the Allied Telesyn Knowledge Base: <http://kb.alliedtelesyn.com>. You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

Email and Telephone Support

For Technical Support via email or telephone, refer to the Support & Services section of the Allied Telesyn web site: www.alliedtelesyn.com.

Returning Products

Products for return or repair must first be assigned a return materials authorization (RMA) number. A product sent to Allied Telesyn without an RMA number will be returned to the sender at the sender's expense.

To obtain an RMA number, contact Allied Telesyn Technical Support through our web site: www.alliedtelesyn.com.

Sales or Corporate Information

You can contact Allied Telesyn for sales or corporate information through our web site: www.alliedtelesyn.com. To find the contact information for your country, select Contact Us -> Worldwide Contacts.

Management Software Updates

New releases of management software for our managed products are available from either of the following Internet sites:

- ❑ Allied Telesyn web site: www.alliedtelesyn.com
- ❑ Allied Telesyn FTP server: <ftp://ftp.alliedtelesyn.com>

If you prefer to download new software from the Allied Telesyn FTP server from your workstation's command prompt, you will need FTP client software and you must log in to the server. Enter "anonymous" for the user name and your email address for the password.

Chapter 1

Introduction to the Fast Ethernet Network Adapter

This chapter provides an introduction to the Allied Telesyn AT-2711FX Fast Ethernet network adapter and contains the following sections:

- ❑ “Functional Description” on page 18
- ❑ “Features” on page 19
- ❑ “Physical Description” on page 20

Functional Description

The adapter connects a PCI-E compliant server or workstation to a Fast Ethernet network using fiber optic cabling and a connector that meets 62.5/125 μm or 50/125 μm multimode specifications. This adapter operates at 100 Mbps full-duplex and half-duplex mode.

The AT-2711FX Fast Ethernet network adapter is a PCI-Ex1 Express card and is available in three versions:

- ☐ AT-2711FX/SC adapter
- ☐ AT-2711FX/ST adapter
- ☐ AT-2711FX/MT adapter

The adapter versions differ only in their connector type. The SC version adapters have an SC connector, as shown in Figure 1 on page 20, and the ST version adapters have an ST connector. The MT version has an MTRJ connector. The LEDs and software drivers are identical for all adapter models and versions.

Contents of Your Shipment

Included with your adapter are the following items:

- ☐ Antistatic bag (used for protecting the adapter when stored or shipped). Keep the adapter in its packaging until ready for installation.
- ☐ CD-ROM with AT-2711FX Fast Ethernet network adapter driver software and documentation.
- ☐ Low-profile bracket

Inform your network supplier of any missing or damaged items. If you need to return the adapter, you must pack it in the original (or equivalent) packing material or the warranty will be voided. See “Returning Products” on page 16.

Features

Following is a list of the AT-2711FX Fast Ethernet network adapter features:

- ❑ PCI-Express x1 interface
- ❑ Flow Control (IEEE 802.1x)
- ❑ Layer 2 Priority Encoding (802.1p)
- ❑ TCP checksum RX/TX support
- ❑ 72 KB packet buffer
- ❑ PXE remote root support
- ❑ Wake on LAN (WOL)
- ❑ Available with SC, ST, or MT-RJ multimode fiber connectors

Physical Description

The faceplate on the AT-2711FX Fast Ethernet network adapter provides two fiber optic connectors for attaching the adapter to a compatible link partner. See Figure 1 for an illustration of the adapter's faceplate.

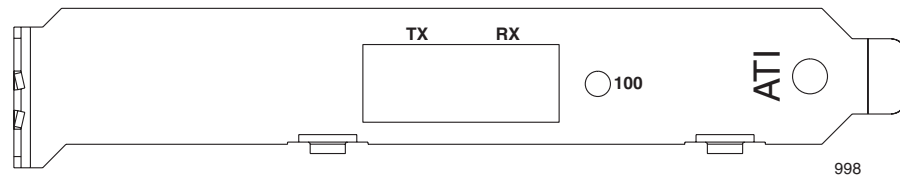


Figure 1. Adapter Faceplate

The adapter has one LED as described in Table 1.

Table 1. Fiber Optic Port 100 LED Status

State	Description
Green	The port is operating at 100 Mbps and has a valid link.
Flashing	The port is receiving or transmitting network packets at 100 Mbps.

Chapter 2

Installing the Hardware

This chapter contains the following sections:

- ❑ “System Requirements” on page 22
- ❑ “Reviewing Safety Precautions” on page 23
- ❑ “Pre-Installation Checklist” on page 25
- ❑ “Installing a Network Adapter Card” on page 26
- ❑ “Connecting the Network Cables” on page 30

System Requirements

Before installing the AT-2711FX Fast Ethernet network adapter, make sure your system meets the requirements listed for your operating system.

Windows Requirements

The following lists the requirements for the Windows 2000, Windows XP SP2, and Windows Server 2003 systems:

- ☐ Pentium-based computer that meets Windows 2000, Windows XP SP2, or Windows Server 2003 software requirements
- ☐ One open PCI-Ex1 (Express) slot
- ☐ 128 MB RAM (minimum)
- ☐ Microsoft Windows 2000 Server, Microsoft Windows XP SP2, Microsoft Windows 2000 Advanced Server, or Microsoft Windows Datacenter (Windows 2000 only)
- ☐ Microsoft Windows Server 2003 Server, or Microsoft Windows Server 2003 Enterprise Server (Windows Server 2003 only)

NetWare Requirements

The following lists the requirements for NetWare:

- ☐ Pentium-based computer that meets Novell NetWare 5.1 and 6.0 software requirements
- ☐ One open PCI-Ex1 (Express) slot
- ☐ 64 MB RAM (minimum)
- ☐ Novell NetWare 5.1 and 6.0, with Support Pack 3 or the most recent NetWare 5 Support Pack

You can get the appropriate updates from the Novell support website <http://www.novell.com/productupdate/patchlist.html>.

Linux Requirements

The following lists the requirements for a Linux system:

- ☐ Pentium-based computer that meets Linux software requirements
- ☐ One open PCI-Ex1 (Express) slot with a 128 MB RAM (minimum)

Reviewing Safety Precautions

Please review the following safety precautions before you begin to install the network adapter card. Refer to Appendix C, “Translated Safety Statements” on page 155 for translated safety statements in your language.



Warning

This is a “Class 1 LED product”. 1



Warning

Do not stare into the laser beam. 2



Warning

Warning: Do not look directly at the fiber optic cable ends or inspect the cable ends with an optical lens. 31



Warning

Do not work on this equipment or cables during periods of lightning activity. 4



Warning

Operating Temperature: This product is designed for a maximum ambient temperature of 40 degrees C. 9

Note

All Countries: Install this product in accordance with local and National Electric Codes. 10



Warning

The adapter is being installed in a system that operates with voltages that can be lethal. Before you remove the cover of your system, you must observe the following precautions to protect yourself and to prevent damage to the system components.

- Remove any metallic objects or jewelry from your hands and wrists.
- Make sure to use only insulated or nonconducting tools.
- Verify that the system is powered OFF and unplugged before accessing internal components.

- Installation or removal of adapters must be performed in a static-free environment. The use of a properly grounded wrist strap or other personal antistatic devices and an antistatic mat is strongly recommended.

Pre-Installation Checklist

1. Check that your server meets the hardware and software requirements listed under “System Requirements” on page 22.
2. Verify that your system is using the latest BIOS.
3. Review the information in the readme.txt file on the CD-ROM for important information not available at the time this manual was created.

Note

If you acquired the adapter software on floppy disk or from the Allied Telesyn support website, enter the path to where the adapter driver files reside on your system.

4. If your system is active, shut it down.
5. When system shut down is complete, power OFF and unplug your system.
6. Holding the adapter card by the edges, remove it from its shipping package and place it on an antistatic surface.
7. Check the adapter for visible signs of damage, particularly on the card's edge connector.

Never attempt to install any damaged adapter. If the adapter is damaged, report it to Allied Telesyn. See “Contacting Allied Telesyn” on page 16.

Installing a Network Adapter Card

The following instructions apply to installing the Fast Ethernet adapter in most systems. Refer to the manuals that were supplied with your system for details about performing these tasks on your particular system.

To install the network adapter card, perform the following procedure:

1. Review the “Pre-Installation Checklist” on page 25 and “Reviewing Safety Precautions” on page 23.

Before installing the adapter, ensure the system power is OFF and unplugged from the power outlet, and that proper electrical grounding procedures have been followed.



Warning

High voltage inside the system presents a safety hazard. Make sure the power is off before removing the cover.

2. Remove the system cover and select any empty PCI-E slot. See Figure 2.

If you do not know how to identify a PCI-E slot, refer to your system documentation.

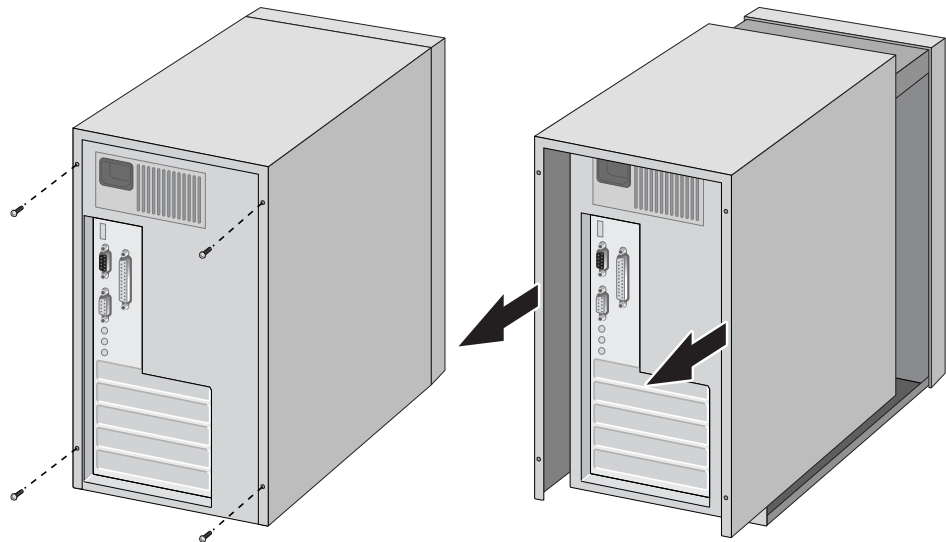


Figure 2. Removing the PC Cover

3. Select an empty, non-shared PCI-E slot and remove the faceplate.

Keep the faceplate in a safe place. You may need it for future use. See Figure 3.

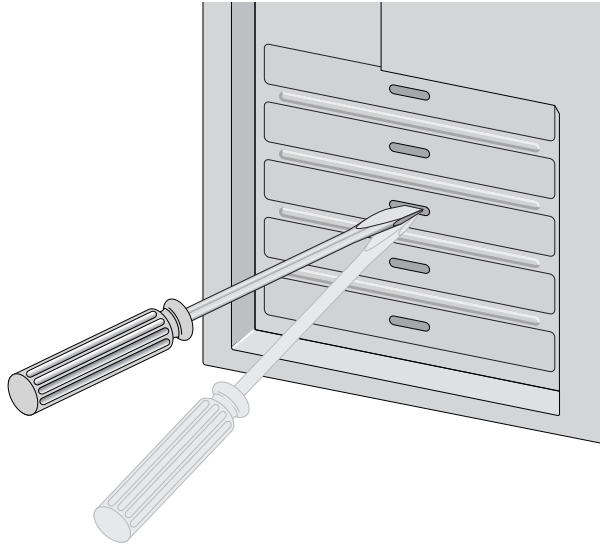


Figure 3. Removing the Faceplate From PCI Slot

Note

If you cannot locate or know how to find an PCI-E slot, refer to the documentation that came with your system.

4. Remove the network adapter card from the shipping package and store the packaging material in a safe location.



Caution

Wear a grounding device and observe electrostatic discharge precautions when installing the network adapter card in a system. Failure to observe this caution could result in damage to the card.

5. Applying even pressure at both corners of the card, push the adapter card until it is firmly seated in the PCI-E slot.

Make sure the card is securely seated. See Figure 4.

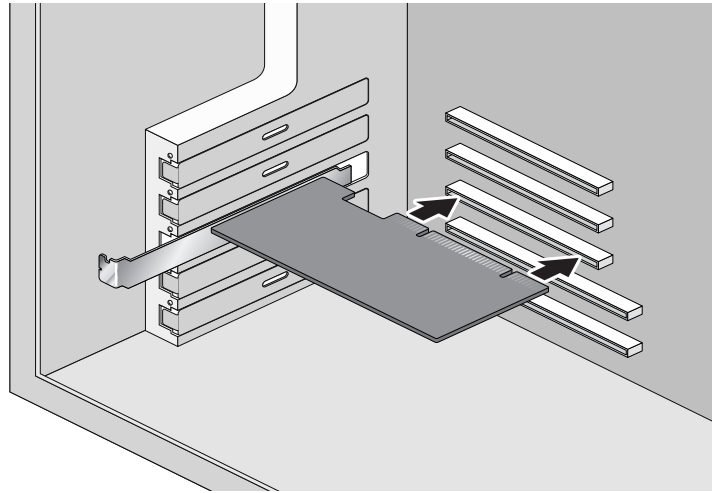


Figure 4. Inserting the Network Adapter Card



Caution

Do not use excessive force when seating the card, as this may damage the system or the adapter. If the card resists seating, remove it from the system, realign it, and try again.

6. Secure the network adapter card to the chassis with a Phillips-head screw (not provided) as shown in Figure 5.

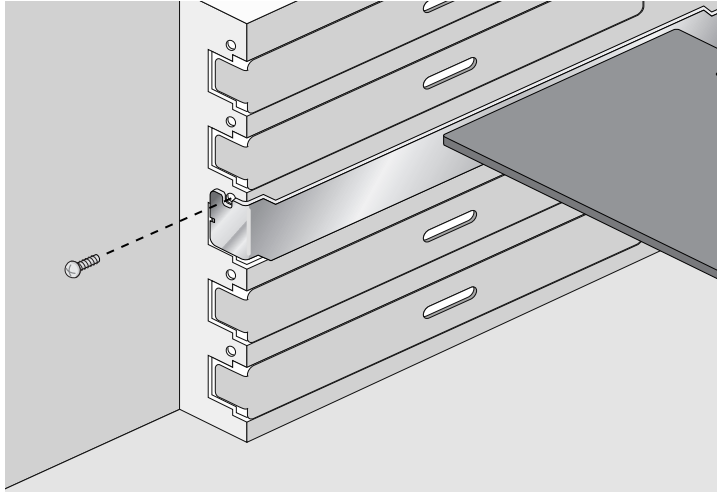


Figure 5. Securing the Adapter Card

7. Replace the system's cover and secure it with the screws removed in Step 2.
8. Disconnect any personal antistatic devices.
9. Power the system on.

Note

If you installed the adapter card in a Microsoft Windows 2003, WindowsXP, or Windows2000 system before installing the driver software, the Found New Hardware Wizard launches automatically. For more information, see Chapter 3, "Installing Windows Server 2003 and Windows XP Driver Software" on page 31 or Chapter 4, "Installing Windows 2000 Driver Software" on page 51.

When the system returns to proper operation, the adapter hardware is fully installed. Next, connect the network cables. See "Connecting the Network Cables" on page 30.

Connecting the Network Cables

To connect a network cable to the adapter, perform the following procedure:

1. Prepare a fiber optic cable according to the specifications in Table 2.

Table 2. 100BASE-FX Fiber Optic Cable Specifications

Port Type	Connector	Media	Maximum Distance
100BASE-FX	Fiber Optic	50 μ m multimode	2000 meters (6561.68 feet)
100BASE-FX	Fiber Optic	62.5 μ m multimode	2000 meters (6561.68 feet)



Warning

The fiber optic ports contain a Class 1 laser device. When the ports are disconnected, always cover them with the provided plug. Exposed ports may cause skin or eye damage.

2. Connect one end of the cable to the adapter.
3. Connect the other end of the cable to the appropriate Ethernet network port or fiber optic port.

Note

After the cable is properly connected at both ends, the adapter port LEDs should be functional. See Table 1 on page 20 for a description of adapter port LED operation. For driver installation and configuration instructions, refer to the software configuration for a specific driver.

Chapter 3

Installing Windows Server 2003 and Windows XP Driver Software

This chapter describes how to install the Windows 2003 and Windows XP driver software. It contains the following sections:

- ❑ “Installing the Driver Software” on page 32
- ❑ “Modifying Configuration Properties” on page 41
- ❑ “Uninstalling the Driver Software” on page 49

Installing the Driver Software

When a Windows Server 2003 or Windows XP system first boots up after you install a new Allied Telesyn AT-2711FX Fast Ethernet network adapter, the system automatically detects the new hardware and prompts you to install the driver software for that device.

Note

The adapter must be physically installed in your system before installing the driver software. See Chapter 2, “Installing the Hardware” on page 21 for details.

Note

If the Windows Server 2003 or Windows XP system detects an adapter and installs a default driver, update the driver as described in “Updating the Adapter Software” on page 35.

Note

If there is an onboard Broadcom network interface, the native Broadcom driver may load. You can use this driver, or the latest driver supplied by Allied Telesyn.

Using the Driver Installer

To install the adapter software on a Windows Server 2003 or Windows XP system, do the following:

Note

Before beginning this procedure, verify that the Windows Server 2003 or Windows XP system has been upgraded to the latest version with the latest service pack applied.

Note

If you are installing in a standard Windows XP or Windows 2003 environment, use the driver in \xp_w2k_w3k\IA32. If you are installing in a Windows XP or Windows 2003 64-bit environment, use the driver in \xp_w2k_w3k\x64.

When you boot up either system after installing the adapter card, a series of *Found New Hardware* windows are displayed.

Note

You must have Administrator privileges to install the driver software.

Note

If you have a Windows XP system, the window in Figure 6 opens. Start with step 1. If you have a Windows Server 2003 system, the window in Figure 7 on page 34 opens. Start with step 2 on the same page.



Figure 6. Welcome to Found New Hardware Wizard Window

4. Click **No, not this time** to copy the driver software from the CD-ROM.
5. Click **Next**.

The second Welcome to Found New Hardware Wizard Window is shown in Figure 7.



Figure 7. Found New Hardware Wizard Window

6. Insert the CD-ROM or floppy diskette.
7. Click **Install the Software Automatically (Recommended)**.
8. Click **Next**.
9. If you are prompted to specify the location of the CD-ROM, click **Browse** (do not use the text field) and locate the path.
10. When the software installation is complete, click **Finish** to close the wizard and complete the software installation.

Updating the Adapter Software

This section provides a procedure for updating the adapter software for the Windows Server 2003 or Windows XP systems.

Note

You may need to reboot your system after completing the driver update to properly load the new drivers.

When you update the adapter software on existing devices, the Advanced Property settings may not be updated unless the existing device is removed by following the instructions in “Uninstalling the Driver Software” on page 49. Then you must perform a scan for hardware changes in the device manager, followed by reinstalling the device with the current adapter software as described in “Installing the Driver Software” on page 32.

Note

Before uninstalling a device, capture all of the Advanced Property settings because the properties will be lost.

Updating the Windows 2003 Server or Windows XP Driver Software

To update the adapter software on a Windows Server 2003 or a Windows XP system, perform the following procedure.

Note

Update all adapters by repeating the following steps on each device.

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8.

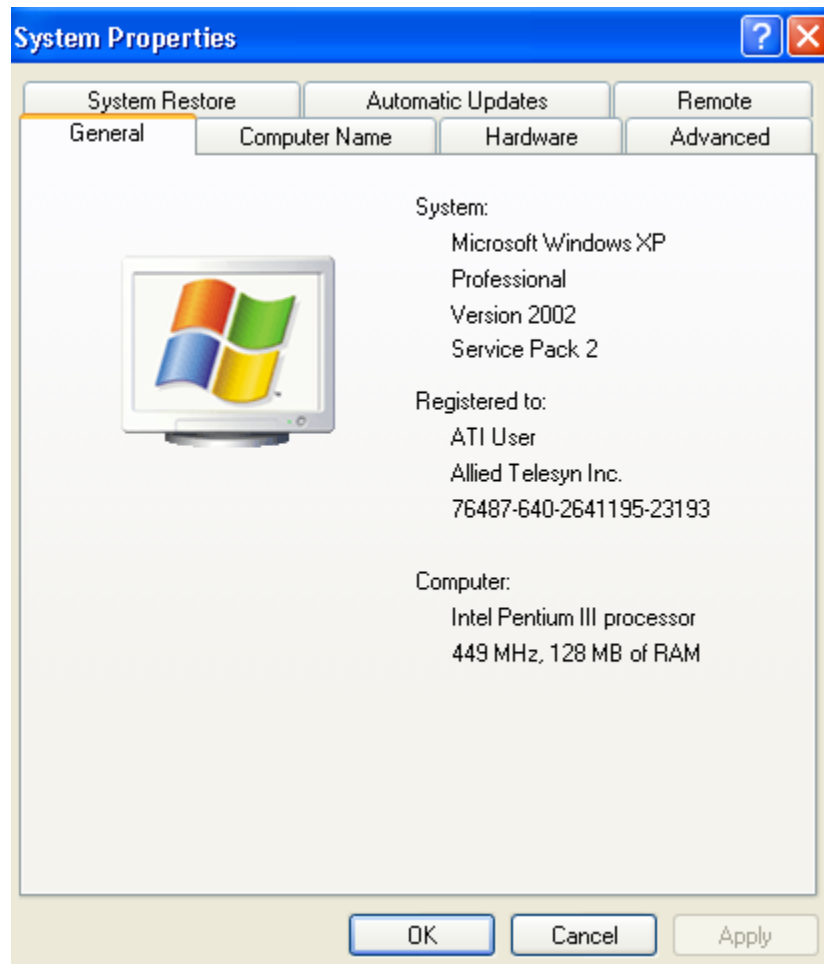


Figure 8. System Properties Dialog Box

4. Select the **Hardware** Tab.

The Hardware Tab is shown in Figure 9 on page 37.

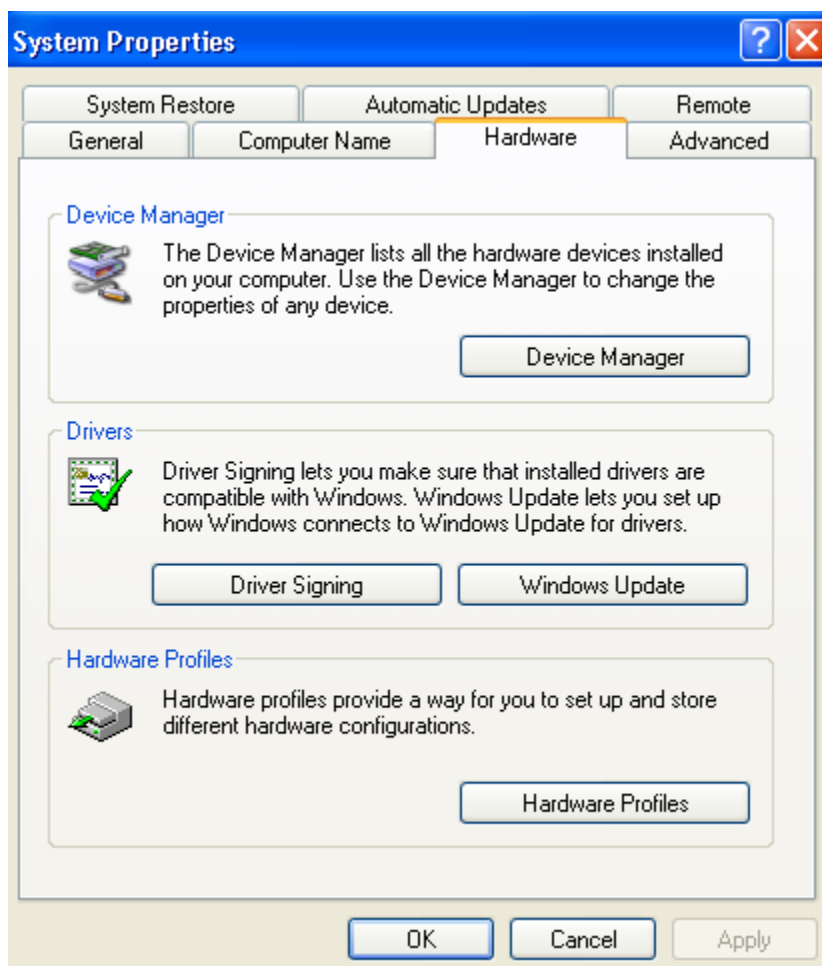


Figure 9. Hardware Tab

5. Click **Device Manager**.

The Device Manager Window is shown in Figure 10.

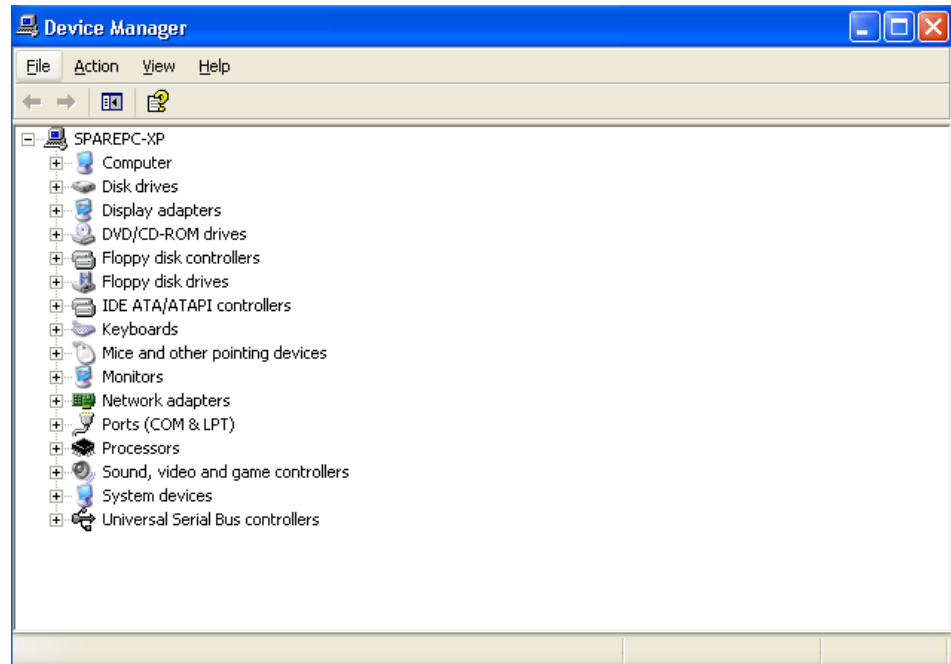


Figure 10. Device Manager Window

6. Insert the CD-ROM.
7. In the Device Manager window, click the + next to the Network Adapters folder.

The selection expands to show the list of installed network adapter cards.

8. Right click on the adapter whose driver you want to update and select **Update Driver**.

The Hardware Update Wizard Window opens, as shown in Figure 11.



Figure 11. Welcome to Hardware Update Wizard Window

9. For a Windows 2003 system, skip to step 10. For a Windows XP system, click **No, not this time** to copy the driver software from the CD-ROM.
10. Click **Next**.

The Second New Found Hardware Wizard Window opens, as shown in Figure 12.

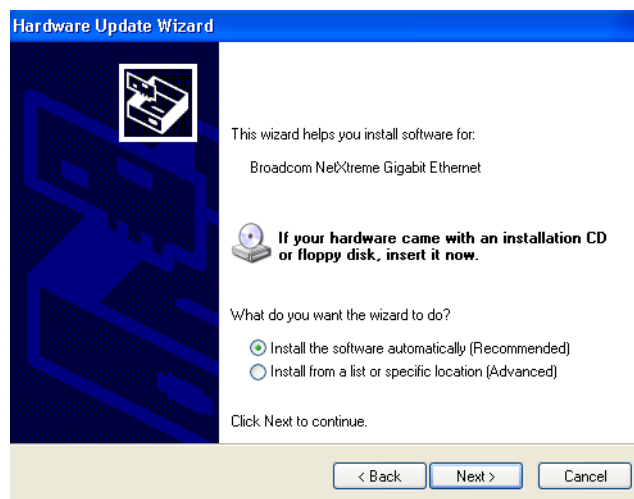


Figure 12. Hardware Update Wizard Window

11. Click **Install the Software Automatically (Recommended)**.
12. Click **Next**.
13. If you are prompted to specify the location of the CD-ROM, click **Browse** (do not use the text field) and locate the path.

After driver software installation is complete, you are ready to modify the configuration properties. See “Modifying Configuration Properties” on page 41.

Modifying Configuration Properties

Although the default values should be appropriate in most cases, you can change any of the available options to meet the requirements of your specific system. After the adapter driver software has been installed, you can use this procedure to verify or change the following adapter properties:

- ☐ "802.1p QOS" on page 41
- ☐ "Checksum Offload" on page 43
- ☐ "Ethernet Wire Speed" on page 44
- ☐ "Flow Control" on page 44
- ☐ "Large Send Offload" on page 45
- ☐ "Locally Administered Address" on page 46
- ☐ "Wake Up Capabilities" on page 46
- ☐ "WOL Speed" on page 47

Note

The following steps may be slightly different if the "Classic Start Menu" is set.

802.1p QOS

The 802.1p QOS property is a standard that enables Quality of Service (QOS). It is responsible for the QOS provisions on the local segment, and the avoidance of the "all packets are treated equally" issue, which falls onto the hub or switch servicing segment. 802.1p QOS provides prioritization of packets traversing a subnet. Thus, when the local segment becomes congested and the hub or switch workload results in the delay (dropping) of packets, those packets with flags that correspond to higher priorities receive preferential treatment and are serviced before packets with lower priorities.

To enable or disable the 802.1p QOS property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13.

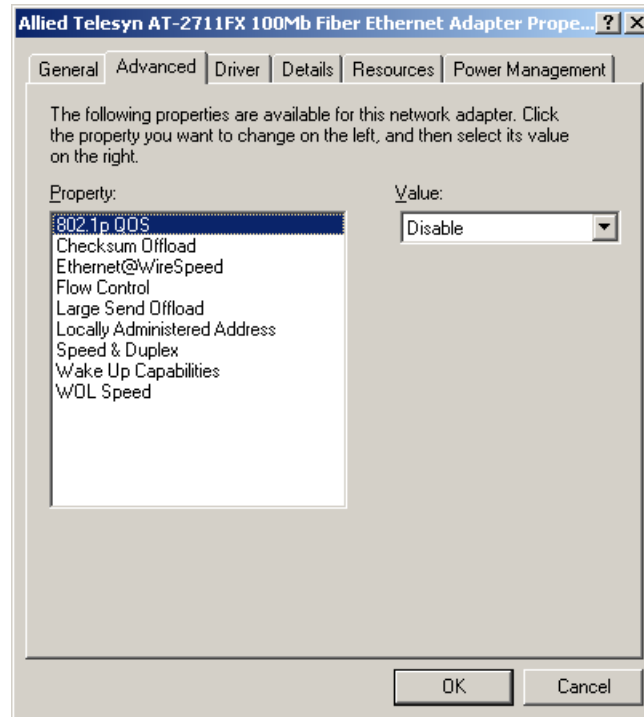


Figure 13. Advanced Tab

5. From the Properties list, select **802.1p QOS**.
6. From the Values list, select one of the following:
 - ☐ **Enable** - Enables the 802.1p QOS property.
 - ☐ **Disable** - Disables the 802.1p QOS property. This is the default.

Note

Enabling 802.1p QOS also requires an 802.1p aware switch.

7. Click **OK**.
8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in “Physical Description” on page 20.

Checksum Offload

Usually, the Checksum Offload function is computed by the protocol stack. By selecting one of the Checksum Offload properties, the adapter can compute the checksum.

To change the Checksum Offload setting, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Checksum Offload**.

6. From the Values list, select one of the following:

- ☐ **None** - Disables checksum offloading.
- ☐ **Rx TCP/IP Checksum** - Enables receive TCP, IP, and UDP checksum offloading.
- ☐ **Tx TCP/IP Checksum** - Enables transmit TCP, IP, and UDP checksum offloading.
- ☐ **Tx/Rx TCP/IP Checksum** (default) - Enables transmit and receive TCP, IP, and UDP checksum offloading.

7. Click **OK**.

8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in “Physical Description” on page 20.

Ethernet Wire Speed

This feature is not supported on the AT-2711FX Fast Ethernet network adapter.

Flow Control

The Flow Control property allows you to enable or disable the receipt or transmission of PAUSE frames which enable the adapter and the switch to control the transmit rate. The side that is receiving the PAUSE frame momentarily stops transmitting. The recommended selection is Disable, which configures the adapter to ignore PAUSE frames.

By default, the Flow Control property is disabled.

To change the Flow Control property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Flow Control**.

6. From the Values list, select one of the following:

- ☐ **Auto** - (default) PAUSE frame receipt and transmission is optimized.
- ☐ **Disable** - PAUSE frame receipt and transmission is disabled (recommended).
- ☐ **Rx PAUSE** - PAUSE frame receipt is enabled.
- ☐ **Rx/Tx PAUSE** - PAUSE frame receipt and transmission is enabled.
- ☐ **Tx PAUSE** - PAUSE frame transmission is enabled.

7. Click **OK**.

8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in “Physical Description” on page 20.

Large Send Offload

Normally, the protocol stack performs TCP segmentation. When you enable the Large Send Offload property, the network adapter can do the TCP segmentation.

To change the Large Send Offload property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Large Send Offload**.

6. From the Values list, select one of the following:

- ☐ **Enable** - Enables the Large Send Offload property.
- ☐ **Disable** - Disables the Large Send Offload property. This is the default.

7. Click **OK**.

8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in “Physical Description” on page 20.

Locally Administered Address

The Locally Administered Address is a user-defined address that is used in place of the MAC address originally assigned to the adapter. Every adapter in the network must have its own unique MAC address. This locally administered address consists of a 12-digit hexadecimal number.

To change the Locally Administered Address property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Locally Administered Address**.

6. In the Values list enter the Locally Administered Address.

- ☐ The range is 0000 0000 0001 to FFFF FFFF FFFD.
- ☐ Do not use a multicast address (least significant bit of the high byte = 1).
- ☐ Do not use all 0's or all F's.

7. Click **OK**.

8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in "Physical Description" on page 20.

Wake Up Capabilities

The Wake Up Capabilities property enables the network adapter to wake up from a low-power mode when it receives a network wake-up frame. Two types of wake-up frames are possible: Magic Packet and Wake Up Frame.

To change the Wake Up Capabilities property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Wake Up Capabilities**.

6. From the Values list, select one of the following:

- ☐ Both - Implements Magic Packet and Wake Up Frame.
- ☐ Magic Packet - Selects Magic Packet as the Wake Up frame.
- ☐ None - Selects no wake-up frame.
- ☐ Wake Up Frame - Selects Wake Up Frame as the wake-up frame and allows the network adapter to wake up the system when an event, such as a ping or an ARP request, is received.

WOL Speed

The WOL Speed property sets the speed at which the network adapter connects to the network while the network adapter is in Wake on LAN mode. By default, the WOL Speed property is set to Auto.

To change the WOL Speed property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Wake Up Capabilities**.
6. From the Values list, select one of the following:
 - ☐ 100Mb - Sets the speed to 100 Mb. This is the default.

Uninstalling the Driver Software

Before physically removing an adapter from your system, first uninstall the adapter driver software. For instructions on how to uninstall the driver software, see the chapter that pertains to your platform.



Caution

Before uninstalling the Allied Telesyn device, be sure to capture all Advanced Property settings because the properties are lost during the uninstall process.

To uninstall the adapter software from your system, perform the following procedure:

1. Start Windows Server 2003 or Windows XP and log in.

Note

You must have Administrator privileges to remove the driver software.

2. Choose from the following:

- ☐ If you have a Windows 2003 Server system, click **Start**. Then select the **Control Panel** from the menu. Double-click the **System** icon.
- ☐ If you have a Windows XP system, right click on **My Computer**. Then select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

3. Click the **Hardware** tab.

The Hardware Tab is shown in Figure 9 on page 37.

4. Click **Device Manager**.

The Device Manager Window is shown in Figure 10 on page 38.

5. In the Device Manager window, click the **+** next to the Network Adapters folder.

The selection expands to show the list of installed network adapter cards.

6. Right-click on the adapter to be removed and select **Uninstall**.

A Confirm Device Removal window opens.

7. Click **OK** to complete the uninstall.

Note

Not all driver files are removed as part of this procedure. Note that drivers and adapters can be removed via the Hot Plug application, if it is supported.

Chapter 4

Installing Windows 2000 Driver Software

This chapter provides procedures for installing the Windows 2000 Driver software and contains the following sections:

- ❑ “Installing the Windows 2000 Driver Software” on page 52
- ❑ “Modifying Configuration Properties” on page 54
- ❑ “Updating the Driver Software” on page 63
- ❑ “Removing the Driver Software” on page 64

Installing the Windows 2000 Driver Software

Note

The Allied Telesyn adapter must be physically installed in your system before installing the driver software. See Chapter 2, “Installing the Hardware” on page 21 for details.

When the Windows 2000 system first boots up after installing a new hardware device, such as an Allied Telesyn adapter, the system automatically detects the new hardware and prompts you to install the driver software for that device.

If the system automatically loads an onboard Broadcom adapter driver. You can use this driver, or the latest one supplied by Allied Telesyn.

A network device driver must be installed before you can use the Allied Telesyn adapter with your Windows 2000 system.

Installing the Adapter Software

When you update the adapter software on existing Allied Telesyn devices, the Advanced Property settings may not be updated unless you remove the existing Allied Telesyn device by following the instructions in “Removing the Driver Software” on page 64. Then you must perform a scan for hardware changes in the device manager and reinstall the Allied Telesyn device with the current adapter software as described in “Installing the Windows 2000 Driver Software” on page 52.

To install the adapter software for Windows 2000, perform the following procedure.

Note

Before beginning this procedure, verify that the Windows 2000 system has been upgraded to the latest version with the latest service pack applied.

1. Start your Windows 2000 system and log in.

Note

You must have Administrator privileges to install the driver software.

When you boot up the Windows 2000 system after installing the adapter card, a series of windows opens.

2. In the Install Hardware Device Drivers window, click **Search for a suitable driver for my device (recommended)**, then click **Next**.

3. In the Locate Driver Files window, select the applicable search location check boxes, then click **Next**.
4. When prompted, insert the media to be searched into your CD-ROM drive, type the path to the driver, and select **OK**.

For example, where "e" is the designation of the CD-ROM drive on your system, enter:

e:\xp_w2k_w3k

5. In the Driver Files Search Results window, verify that the correct path to the driver software is shown, then click **Next**.

Modifying Configuration Properties

Although the default values should be appropriate in most cases, you can change any of the available options to meet the requirements of your specific system. After the adapter driver software has been installed, you can use this procedure to verify or change the following adapter properties:

- ☐ “802.1p QOS” on page 55
- ☐ “Checksum Offload” on page 56
- ☐ “Flow Control” on page 57
- ☐ “Locally Administered Address” on page 58
- ☐ “Speed & Duplex” on page 59
- ☐ “Wake Up Capabilities” on page 60
- ☐ “WOL Speed” on page 61

Configuring Driver Properties

To configure the adapter properties, perform the following procedure:

1. On the desktop, right click **My Computer**.

The My Computer window opens.

2. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

3. Click the **Advanced** tab.

The Advanced tab is shown in Figure 14 on page 55.

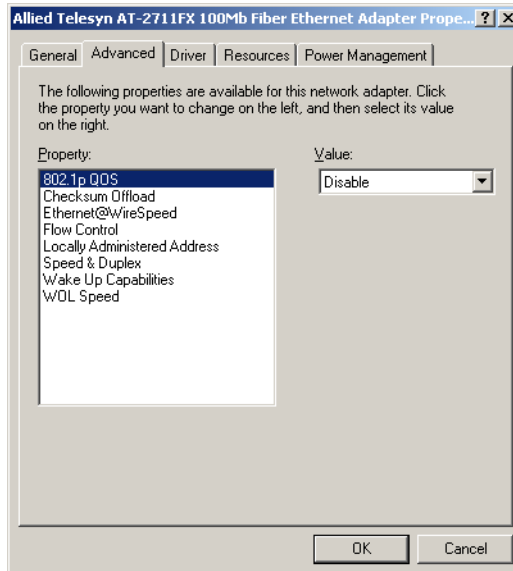


Figure 14. Advanced Tab

4. Change the operating properties as needed.

To change adapter operating property, click a property in the Property list and then select a setting from Value list. See the following sections for a description of the properties.

802.1p QOS

The 802.1p QOS property is a standard that enables Quality of Service (QOS). It is responsible for the QOS provisions on the local segment, and the avoidance of the "all packets are treated equally" issue, which falls onto the hub or switch servicing segment. 802.1p QOS provides prioritization of packets traversing a subnet. Thus, when the local segment becomes congested and the hub or switch workload results in the delay (dropping) of packets, those packets with flags that correspond to higher priorities receive preferential treatment and are serviced before packets with lower priorities.

To enable or disable the 802.1p QOS property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **802.1p QOS**.
6. From the Values list, select one of the following:
 - ☐ **Enable** - Enables the 802.1p QOS property.
 - ☐ **Disable** - Disables the 802.1p QOS property. This is the default.

Note

Enabling 802.1p QOS also requires an 802.1p aware switch.

7. Click **OK**.
8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in “Physical Description” on page 20.

Checksum Offload

Usually, the Checksum Offload function is computed by the protocol stack. By selecting one of the Checksum Offload properties, the adapter can compute the checksum.

To change the Checksum Offload setting, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Checksum Offload**.
6. From the Values list, select one of the following:
 - ☐ **None** - Disables checksum offloading.
 - ☐ **Rx TCP/IP Checksum** - Enables receive TCP, IP, and UDP checksum offloading.
 - ☐ **Tx TCP/IP Checksum** - Enables transmit TCP, IP, and UDP checksum offloading.
 - ☐ **Tx/Rx TCP/IP Checksum** (default) - Enables transmit and receive TCP, IP, and UDP checksum offloading.
7. Click **OK**.
8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.
9. Verify that the adapter port LEDs operate as described in "Physical Description" on page 20.

Ethernet Wire Speed

This parameter is visible but not supported on the AT-2711FX Fast Ethernet adapter.

Flow Control

The Flow Control property allows you to enable or disable the receipt or transmission of PAUSE frames which enable the adapter and the switch to control the transmit rate. The side that is receiving the PAUSE frame momentarily stops transmitting. The recommended selection is Disable, which configures the adapter to ignore PAUSE frames.

By default, the Flow Control property is disabled.

To change the Flow Control property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Flow Control**.
6. From the Values list, select one of the following:
 - ☐ **Auto** - (default) PAUSE frame receipt and transmission is optimized.
 - ☐ **Disable** - PAUSE frame receipt and transmission is disabled (recommended).
 - ☐ **Rx PAUSE** - PAUSE frame receipt is enabled.
 - ☐ **Rx/Tx PAUSE** - PAUSE frame receipt and transmission is enabled.
 - ☐ **Tx PAUSE** - PAUSE frame transmission is enabled.
7. Click **OK**.
8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in "Physical Description" on page 20.

Locally Administered Address

The Locally Administered Address is a user-defined address that is used in place of the MAC address originally assigned to the adapter. Every adapter in the network must have its own unique MAC address. This locally administered address consists of a 12-digit hexadecimal number.

To change the Locally Administered Address property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Locally Administered Address**.

6. From the Values list, select one of the following:

- ☐ The range is 0000 0000 0001 to FFFF FFFF FFFD.
- ☐ Do not use a multicast address (least significant bit of the high byte = 1).
- ☐ Do not use all 0's or all F's.

7. Click **OK**.

8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in "Physical Description" on page 20.

Speed & Duplex

The Speed & Duplex property sets the connection speed and mode to that of the network. Note that Full-Duplex mode allows the adapter to transmit and receive network data simultaneously.

To change the Speed & Duplex property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Speed & Duplex**.
6. From the Values list, select one of the following:
 - ☐ 100 Mb Full. Sets the speed at 100 Mbit/s and the mode to Full-Duplex.
 - ☐ 100 Mb Half. Sets the speed at 100 Mbit/s and the mode to Half-Duplex.
 - ☐ 10 Mb Full (not supported on the AT-2711FX Fast Ethernet adapter) and 100 Mb Full settings force the network adapter to connect to the network in Full-Duplex mode. The network adapter may not function if the network is not configured to operate at the same mode.
7. Click **OK**.
8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.
9. Verify that the adapter port LEDs operate as described in “Physical Description” on page 20.

Wake Up Capabilities

The Wake Up Capabilities property enables the network adapter to wake up from a low-power mode when it receives a network wake-up frame. Two types of wake-up frames are possible: Magic Packet and Wake Up Frame.

To change the Wake Up Capabilities property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **Wake Up Capabilities**.
6. From the Values list, select one of the following:
 - ☐ Both (default). Selects both Magic Packet and Wake Up Frame as wake-up frames.
 - ☐ Magic Packet. Selects Magic Packet as the wake-up frame.
 - ☐ None. Selects no wake-up frame.
 - ☐ Wake Up Frame. Selects Wake Up Frame as the wake-up frame and allows the network adapter to wake the system when an event such as a ping or an Address Resolution Protocol (ARP) request is received.
7. Click **OK**.
8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

WOL Speed

The WOL Speed property sets the speed at which the network adapter connects to the network while the network adapter is in Wake on LAN mode. By default, the WOL Speed property is set to Auto.

To change the WOL Speed property, perform the following procedure:

1. Start either a Windows Server 2003 system or a Windows XP system and log in.

You must have Administrator privileges to update the driver software.

2. On the desktop, right click **My Computer**.

The My Computer window opens.

3. Select **Properties** from the menu.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

4. Click the **Advanced** tab.

The Advanced tab is shown in Figure 13 on page 42.

5. From the Properties list, select **WOL Speed**.
6. From the Values list, select one of the following:

- ☐ 10 Mb. This is not supported on the AT-2711FX Fast Ethernet adapter.

- ☐ 100 Mb. Sets the speed to 100 Mbit/s.
- ☐ Auto (default). Sets the speed for optimum network connection.

7. Click **OK**.

8. If prompted to restart your computer, click **Yes**.

Even though it is not necessary to reboot the system for new adapter properties to take effect, rebooting is recommended to reinitialize all registers.

9. Verify that the adapter port LEDs operate as described in “Physical Description” on page 20.

Updating the Driver Software

To replace adapter driver software with newer versions as they become available, perform the following procedure:

1. Start Windows 2000 and log in.

Note

You must have Administrator privileges to remove the driver software.

2. Open the Control Panel and double-click the **System** icon.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

3. Click the **Hardware** tab.

The Hardware Tab is shown in Figure 9 on page 37.

4. Click **Device Manager**.

The Device Manager Window is shown in Figure 10 on page 38.

5. In the Device Manager window, click the **+** next to the Network Adapters folder.

The selection expands to show the list of installed network adapter cards.

6. Click **Update Driver**.

The Update Device Driver Wizard opens.

7. Click **Next**.

The Install Hardware Device Driver dialog box opens.

8. Click **Display a list of known drivers for this device so that I can choose a specific driver**, then click **Next**.

9. When prompted, click **Have Disk** and insert the media to be searched into your CD-ROM drive, type the path to the driver, and select **OK**.

10. Select the appropriate driver to update, then click **Next**.

11. After the software update is complete, click **Finish** to close the wizard and complete the driver update.

Removing the Driver Software

To remove the network adapter driver software, perform the following procedure:



Caution

Before uninstalling the Allied Telesyn device, be sure to capture all Advanced Property settings because the properties are lost during the uninstall process.

Note

Before physically removing an adapter from your system, first remove the adapter driver software.

1. Start Windows 2000 and log in.

Note

You must have System Administrator privileges to remove the driver software.

2. Open the **Control Panel** and double-click the **System** icon.

The System Properties dialog box opens, as shown in Figure 8 on page 36.

3. Click the **Hardware** tab.

The Hardware Tab is shown in Figure 9 on page 37.

4. Click **Device Manager**.

The Device Manager Window is shown in Figure 10 on page 38.

5. In the Device Manager window, click the **+** next to the Network Adapters folder.

The selection expands to show the list of installed network adapter cards.

6. Right-click on the adapter to be removed and select **Uninstall**.

A Confirm Device Removal window opens.

7. Click **OK** to complete the uninstall.

Note

Not all driver files are removed as part of this procedure. Note that the driver and adapter can be removed via the Hot Plug application, if it is supported.

Chapter 5

Installing the Linux Driver Software

This chapter describes the Linux driver for the AT-2711FX Fast Ethernet adapter and includes the following sections:

- ❑ “Installing the Linux Driver Software” on page 68
- ❑ “Network Installation” on page 70
- ❑ “Removing the Linux Driver from a TAR Installation” on page 71
- ❑ “Module Parameters” on page 72

Installing the Linux Driver Software

The section describes the following Linux driver installations:

- ❑ “Building a Driver from a TAR File” on page 68
- ❑ “Removing the tg3 Driver” on page 68

Note

On some newer Distributions and Kernels, it may be necessary to remove the tg3 driver before loading the tg3 driver supplied on the CD. Follow the instructions in the “Removing the tg3 Driver” on page 68.

Building a Driver from a TAR File

To build a driver from a TAR file, perform the following procedure.

1. Create a directory and extract the TAR files:

```
tar xvzf tg3-<version>.tgz
```

2. Build the driver tg3.o as a loadable module for the running kernel:

```
cd tg3-<version>/src  
make
```

3. Test the driver by loading it:

```
insmod tg3.o
```

4. Install the driver and man page:

```
make install
```

5. To configure network protocol and address, refer to the manuals supplied with your operating system.

Removing the tg3 Driver

Many various Linux distributions may load the native tg3 driver by default for the Allied Telesyn Fast Ethernet adapters. It may be necessary to unload the native tg3 driver first, before installing the tg3.o driver from this installation.

Note

On some Distributions and Kernels, it may be necessary to remove the native tg3 driver before loading the Allied Telesyn tg3.o driver.

Even though tg3 is a fully functioning driver, Allied Telesyn recommends

that you use the newer tg3 driver provided by Allied Telesyn. Use ifconfig to bring down all eth# interfaces used by tg3 and enter the following command to unload the tg3 driver.

```
rmmod tg3
```

For more detailed Linux specific information on ifconfig, rmmod, or modules.conf, refer to the respective man pages.

Network Installation

For network installations through NFS, FTP, or HTTP (using a network boot disk or PXE), a driver diskette that contains the tg3 driver may be needed. The driver diskette images for the most recent Red Hat versions are included. Boot drivers for other Linux versions can be compiled by modifying the Makefile and the make environment. Further information is available from Red Hat's website, <http://www.redhat.com>.

To create the driver diskette, select the appropriate image file and do the following:

```
dd if=dd.img of=/dev/fd0H1440.
```

Removing the Linux Driver from a TAR Installation

If the driver was installed using make install from the tar file, you must manually delete the tg3.o driver.

Module Parameters

Optional parameters for the driver can be supplied as command line arguments to the `insmod` command. Typically, these parameters are set in the file `/etc/modules.conf` (see the man page for `modules.conf`). These parameters take the following form:

```
<parameter>=value[,value,...]
```

where the multiple values for the same parameter are for multiple Allied Telesyn Fast Ethernet adapters installed in the system.

Note

The default or other meaningful values are used when invalid values are selected. Some combinations of parameter values may conflict and lead to failures. The driver cannot detect all such conflicting combinations.

The module parameters are listed below:

❑ **line_speed**

Selects the line speed of the link. This parameter is used together with `full_duplex` and `auto_speed` to select the speed and duplex operation of the link and the setting of Auto-Negotiation. Choose from the following selections.

- 0 - Autonegotiate for highest speed supported by link partner (default)
- 10 - 10 Mbps
- 100 - 100 Mbps
- 1000 - 1000 Mbps

If `line_speed` is set to 10, 100, or 1000 and the `auto_speed` is set to 1, the NIC autonegotiates for the selected speed (and selected duplexity). If `auto_speed` is set to 0, the selected speed and duplexity are set without Auto-Negotiation. Note that 1000 Mbps must be negotiated for copper twisted pair links.

❑ **auto_speed**

Enables or disables Auto-Negotiation. Choose from the following selections.

- 0 - Auto-Negotiation disabled
- 1 - Auto-Negotiation enabled (default)

Note

This parameter is ignored and assumed to be 1 if the `line_speed` parameter is set to 0.

❑ full_duplex

Selects the duplexity of the link. This parameter is used together with `line_speed` to select the speed and duplexity of the link. Note that this parameter is ignored if `line_speed` is 0. Choose from the following selections.

- 0 - half duplex
- 1 - full duplex (default)

❑ rx_flow_control

Enables or disables receiving flow control (pause) frames. This parameter is used together with `auto_flow_control`. Choose from the following selections.

- 0 - pause receive disabled
- 1 - pause receive enabled if `auto_flow_control` is set to 0, or pause receive advertised if `auto_flow_control` is set to 1 (default)

❑ tx_flow_control

Enables or disables transmitting flow control (pause) frames. This parameter is used together with `auto_flow_control`. Choose from the following selections.

- 0 - pause transmit disabled
- 1 - pause transmit enabled if `auto_flow_control` is set to 0, or pause transmit advertised if `auto_flow_control` is set to 1 (default)

❑ auto_flow_control

Enables or disables Auto-Negotiation of flow control. This parameter is used together with `rx_flow_control` and `tx_flow_control` to determine the advertised flow control capability. Choose from the following selections.

- 0 - flow control Auto-Negotiation disabled
- 1 - flow control Auto-Negotiation enabled with capability specified in `rx_flow_control` and `tx_flow_control` (only valid if `line_speed` is set to 0 or `auto_speed` is set to 1) (default)

❑ mtu

Enables jumbo frames up to the specified MTU size. The valid range for this parameter is 1500 to 9000. The default is 1500 which is the standard Ethernet (non-jumbo) MTU size. Note that the MTU size excludes the Ethernet header size of 14 bytes. Actual frame size is MTU size + 14 bytes.

The MTU size can also be changed using `ifconfig` after the driver is loaded. See the `ifconfig` man page for details.

☐ **tx_checksum**

Enables or disables hardware transmit TCP/UDP checksum. Choose from the following selections.

- 0 - checksum disabled
- 1 - checksum enabled (default)

☐ **rx_checksum**

Enables or disables hardware receive TCP/UDP checksum validation. Choose from the following selections.

- 0 - checksum disabled
- 1 - checksum enabled (default)

☐ **scatter_gather**

Enables or disables scatter-gather and 64-bit DMA on x86. This option is only useful when running on TUX-enabled kernels or kernels with zero-copy TCP. Choose from the following selections.

- 0 - scatter-gather and 64-bit DMA on x86 disabled
- 1 - scatter-gather and 64-bit DMA on x86 enabled (default)

☐ **tx_pkt_desc_cnt**

Configures the number of transmit descriptors. Default is 100. The valid range is from 1 to 600. Depending on kernel and system architecture, the driver may require up to 268 bytes per descriptor. Note that the driver may not be able to allocate the required amount of memory if this parameter is set too high. This parameter should not be set less than 80 if `adaptive_coalesce` (see below) is enabled.

☐ **rx_std_desc_cnt**

Configures the number of receive descriptors for frames up to 1528 bytes. Default is 200. The valid range is from 1 to 511. This parameter should not be set less than 80 on systems with high network traffic. Setting this parameter higher allows the NIC to buffer larger bursts of network traffic without dropping frames, especially on slower systems. Note that the driver may not be able to allocate the required amount of memory if this parameter is set too high. This parameter should not be set less than 50 if `adaptive_coalesce` (see below) is enabled.

❑ **rx_jumbo_desc_cnt**

Configures the number of receive descriptors for jumbo frames larger than 1528 bytes. The default is 128 and the valid range is from 1 to 255. When jumbo frames larger than 1528 bytes are used, this parameter should not be set lower than 60 on systems with high network traffic. Setting this parameter higher allows the NIC to buffer larger bursts of jumbo traffic without dropping frames, especially on slower systems. Depending on kernel and system architecture, the driver may require up to 268 bytes per descriptor. Note that each descriptor also requires a buffer the size of a maximum jumbo frame. On systems with insufficient memory, it may be necessary to reduce this parameter. This parameter should not be set to less than 50 if `adaptive_coalesce` (see below) is enabled. When the maximum frame size is less than 1528 (MTU size less than 1514), this parameter is not used and is always 0.

❑ **adaptive_coalesce**

Enables or disables adaptive adjustments to the various interrupt coalescing parameters. Enabling it allows the driver to dynamically adjust the interrupt coalescing parameters to achieve high throughput during heavy traffic and low latency during light traffic.

`rx_std_desc_cnt`, (and `rx_jumbo_desc_cnt` if using jumbo frames) should not be set less than 50, and `tx_pkt_desc_cnt` should not be set less than 80 when this parameter is enabled. Choose from the following selections.

- 0 - disabled
- 1 - enabled (default)

❑ **rx_coalesce_ticks**

Configures the number of 1 usec ticks before the NIC generates receive interrupt after receiving a frame. This parameter works in conjunction with the `rx_max_coalesce_frames` parameter. Interrupt will be generated when either of these thresholds is exceeded. A value of 0 means this parameter is ignored and an interrupt is generated when the `rx_max_coalesce_frames` threshold is reached. The valid range is from 0 to 500 and default is 80. This parameter is not used and is adjusted automatically if `adaptive_coalesce` is set to 1.

❑ **rx_max_coalesce_frames**

Configures the number of received frames before the NIC generates receive interrupt. The valid range is from 0 to 100 and the default is 15. This parameter and `rx_coalesce_ticks` cannot both have a value of 0. If both parameters are set to 0, no receive interrupts are generated. It should also be set significantly lower than `rx_std_desc_cnt` (and `rx_jumbo_desc_cnt` if using jumbo frames). This parameter is not used and is adjusted automatically if `adaptive_coalesce` is set to 1.

❑ **tx_coalesce_ticks**

Configures the number of 1 usec ticks before the NIC generates transmit interrupt after transmitting a frame. This parameter works in conjunction with the tx_max_coalesce_frames parameter. Interrupt is generated when either of these thresholds is exceeded. A value of 0 means this parameter is ignored and an interrupt is generated when the tx_max_coalesce_frames threshold is reached. The valid range is from 0 to 500 and the default is 400. This parameter is not used and is adjusted automatically if adaptive_coalesce is set to 1.

❑ **tx_max_coalesce_frames**

Configures the number of transmitted frames before the NIC generates transmit interrupt. The valid range is from 0 to 100 and the default is 40. This parameter and tx_coalesce_ticks cannot both have a value of 0. If both parameters have a value of 0, no transmit completion interrupt is generated. This parameter should always be set lower than tx_pkt_desc_cnt. This parameter is not used and is adjusted automatically if adaptive_coalesce is set to 1.

❑ **stats_coalesce_ticks**

Configures the number of 1 usec ticks between periodic statistics block DMAs. The valid range is from 0 to 3600000000, and the default is 1000000 (1 sec.). Set this parameter to a value of 0 to disable statistics updates. This parameter is not used and is set to default if rx_adaptive_coalesce is set to 1.

❑ **enable_wol**

Enables or disables magic packet Wake-On-LAN when the system is shut down. Note that not all systems support Wake-On-LAN. Choose from the following selections.

- 0 magic packet Wake-On-LAN disabled (default)
- 1 magic packet Wake-On-LAN enabled

❑ **enable_tso**

Enables or disables TCP Segmentation Option (TSO) when using kernels that support it. Choose from the following selections.

- TSO disabled (default)
- TSO enabled

Chapter 6

Installing the NetWare Driver Software

This chapter provides procedures for installing the NetWare Driver software and contains the following sections:

- ❑ “Driver Installation” on page 78
- ❑ “Pre-Installation Requirements” on page 79
- ❑ “Installing Novell NetWare Server 5.x or 6.0 Driver Software” on page 80
- ❑ “Verifying or Modifying Adapter Parameters” on page 82
- ❑ “Removing Drivers from Autoexec.ncf” on page 87

Driver Installation

This chapter describes how to perform the following tasks:

- ❑ Verify that the required OS support files are installed on the server and the NetWare pre-installation parameters are set correctly.
- ❑ Install the driver software in the Novell NetWare environment.
- ❑ If necessary, reconfigure the driver software after installation.
- ❑ For an adapter installation with an existing NetWare server, NetWare automatically detects the new adapter and attempts to load the appropriate driver. Ensure that your Allied Telesyn CD-ROM is loaded and select the appropriate driver for your Allied Telesyn Fast Ethernet adapter.

A commonly used method to install a driver on a NetWare server running 5.x or 6.0 and higher is through *NWCONFIG*.

Pre-Installation Requirements

A network device driver must be installed before the Fast Ethernet adapter can be used with your Novell NetWare system.

Before you can successfully install the adapter driver for Novell NetWare, the adapter card must be physically installed in the server and, typically, the NetWare OS software must already be running on the server. Make sure that your server meets the hardware and operating system software requirements described Chapter 2, "Installing the Hardware" on page 21.

To enable the Allied Telesyn Fast Ethernet adapter to function correctly, you need to install the latest Novell NetWare support pack files. The NetWare support pack or patch file(s) needed for the operating system running on your server are indicated in Table 3.

Table 3. NetWare Support Files

NetWare OS	Support Pack or Patch	Files to be Installed
NetWare 5.1	Latest NetWare 5.1 Support Pack	The latest support pack can be found at http://support.novell.com/patlst.htm
NetWare 6.0	Latest NetWare 6.0 Support Pack	

Note

If you are installing NetWare 5.x or 6.0 for the first time on a system, the process to install the adapter driver occurs during the OS installation procedure. Install the NetWare 5 support pack after you have successfully installed the operating system on the server.

To obtain the latest support pack files, go to the Novell support website and click on the Minimum Patch List option in the navigation bar. Scroll down the page and, using Table 3 above as a guide, select and download the latest support pack or patch file(s) for the operating system running on your server.

Installing Novell NetWare Server 5.x or 6.0 Driver Software

Ensure that the server has the latest support pack available installed. The latest support packs can be found at: <http://support.novell.com/misc/patlst.htm>.

You may want to create an archive disk by copying all the files from the CDROM\Driver\Netware directory onto a floppy disk. If you use the CD-ROM directly, be sure that the CDROM.NLM is loaded and that you are aware of the NetWare Volume name for the CD-ROM that you just installed.

To install the Novell NetWare Server 5.x or 6.0 Driver software, perform the following procedure:

1. From the NetWare Server console, type LOAD NWCONFIG (or just NWCONFIG) and press **Enter**.
2. From the Configuration Options screen, select **Driver options** and press **Enter**.
3. Select the **Configure network drivers** option and press **Enter**.
4. Choose the **Load an additional driver** option and press **Enter**.
5. Insert the CD-ROM and select the **Install an unlisted driver** option, by pressing **Insert**.
6. If you are using the archive disk that you created, insert the disk into drive A: and press **Enter**. If you have the CD-ROM mounted as a NetWare volume, go to step 7.
7. If you have the CD-ROM mounted as a NetWare volume, press **F3** and enter <Volume Name>: Driver\Netware as the source path.

Where <Volume Name> is the name of the NetWare Volume for the CD-ROM and Netware\Driver is the directory of the specific files on the CD-ROM needed for this installation.

The name of the driver is displayed.

8. Press **Enter** to select the highlighted driver.

A copy the driver prompt appears.

9. Select **Yes** and press **Enter**.
10. Select **Yes** and press **Enter** to copy the .LDI file. This is the installation script for the driver.
11. Follow the instructions for the installation.

12. Select **Save parameters and load driver** to continue.
13. Choose **Exit** to return to the server console prompt.

Note

If you are performing an initial installation of NetWare 5.x or 6.0 and have more than two adapters installed, the install program allows you to allocate the actual number of packet receive buffers needed by the adapter. During installation, make sure the RxBuffers value is set to 32 which is the minimum number of buffers the driver requires for each adapter. While this setting affects adapter performance, it allows installation of the operating system and up to eight adapters during the initial installation. Once installation is complete, increase the number of buffers allocated to the driver as described in “Verifying or Modifying Adapter Parameters” on page 82.

14. 5.x or 6.05.x or 6.0 NetWare 5.x or 6.0 has been successfully installed, set the minimum packet receive buffers parameter in the startup.ncf file to 1500 for each adapter in the system.

Set the maximum packet receive buffers to three times the minimum packet receive buffers. Typically 4 MB of RAM is required per 1000 receive buffers. For more information, see “Verifying or Modifying Adapter Parameters” on page 82.

15. In the autoexec.ncf file, delete the packet receive buffers parameter (RxBuffers=32) in the load statement for this adapter. Deleting the receive buffers phrase from the load statement resets the receive buffers parameter to the default value of 200 for this adapter.

Note

The server needs to be restarted for the new configuration.

Example: The default maximum number of receive buffers for the system is 500; the default minimum is 128. Edit the startup.ncf file to have the following entries. The actual numbers will be a function of the number of ports in the system. The following is an example for a system with 8 ports installed:

```
set maximum packet receive buffers = 36000  
set minimum packet receive buffers = 12000
```

Verifying or Modifying Adapter Parameters

When an adapter configuration is saved, the NetWare install program adds load and bind statements to the autoexec.ncf file. By accessing this file, you can verify the parameters configured for each adapter, modify them, or enter additional parameters.

Note

The Novell monitor program and the config command are also useful for verifying driver configuration. For information on how to use these programs, see the Utilities Reference in your Novell NetWare online documentation.

The parameters that can be defined in the load statements are described below:

Configuration Parameters for B57.LAN driver:

TxDescriptors=

This is to initialize Descriptor resources on the adapter for transmits.

Min = 100

Max = 512

Default = 120

RxBuffers=

This is to pre-allocate receive ECBs & Receive adapter resources. This setting may be affected by the NetWare server maximum/minimum packet receive buffer settings.

Min = 32

Max = 1000

Default = 200

RxTicks=

This is to enable the use of batching receives within a specific time period.

Min = 0, disabled

Max = 5000000, 5 seconds

Units are in micro seconds

Default value is 300

TxTicks=

This is to enable the use of a transmit "tick" threshold interrupt within a specific time period.

Min = 0, disabled

Max = 5000000, 5 seconds

Units are in micro seconds

Default is 200

TxPacketsPer=

This is to enable the use of allowing an interrupt to occur after a specific amount of packets are transmitted.

Min = 0, disabled

Max = 100

Default is 20

RxPacketsPer=

This is to enable the use of allowing an interrupt to occur after a specific amount of packets are received.

Min = 0, disabled

Max = 100

Default is 75

Checksum=

This is to enable or disable the transmit & receive checksum off loading feature. The checksum off loading support is only for TCP/IP packets, for that reason it is defaulted to OFF.

Choices are:

OFF, ON, TX, RX

Default value is OFF

TxFLOW=

This keyword allows enabling/disabling of TxFlow control.

Choices are:

ON, OFF

Default value is OFF.

RxFLOW=

This keyword allows enabling/disabling of RxFlow control.

Choices are:

ON, OFF

Default value is OFF.

PDriver=

Allows for the driver to operate in persistent driver mode. Only use if adapter is placed in a Hot Plug PCI slot and only if required to swap with an exact same board.

Choices are:

OFF, ON

Default value is OFF.

NODE=

This is a Novell NetWare keyword.

This keyword will allow an input Ethernet node address to replace the adapter factory programmed Ethernet node address until a subsequent reboot.

Choices are:

NODE=nnnnnnnnnnnnnn

FRAME=

This is a Novell Netware keyword.
String specifying the frame type.
Choices are:

ETHERNET_II

ETHERNET_802.3

ETHERNET_802.2

ETHERNET_SNAP

Default value is ETHERNET_802.2

SLOT=

This is a Novell Netware keyword.
System-wide unique Hardware Instance Number (HIN) that
may be the physical slot number on a slot based bus such
as PCI.
SLOT=n

Jumbo=

Keyword to enable Jumbo frame support. When enabled,
jumbo packets of up to 9000 bytes are supported.
Choices are:
Jumbo=1536-9100
Default is no jumbo packets

Note

Jumbo frames are only supported on NetWare 6.0 and above. Plus
the first frame loaded must be ETHERNET_II

Note

Jumbo frame support must have the following text in the Startup.ncf
file: "Set maximum physical receive packet size = 18000".

P3=

This keyword is used when running perform3.exe tests and
may increase performance on networks running with many
ipx clients.
Set P3=1, when running the perform3 test back to back to
a single client.
Set P3=2, when running the perform3 test with many
clients.
Default: P3=0.

Spuriousfix=

When this keyword is set to 1 (spurious fix is on), the
spurious interrupts count that is sometimes displayed on
the NetWare console monitor, may be reduced. By setting
this keyword to 0 (spurious fix is OFF), performance of
the driver may be enhanced.

The Default is spurious fix = 1 (spurious fix is on).

Choices are:

Spuriousfix=0

Spuriousfix=1 (default).

Poll=

To disable interrupt driven mode in the driver set Poll=1 and the driver will not use interrupts, but will be polled by the Netware OS. This is a common feature supported in NW. The poll mode may increase driver performance in some environments.

Choices are:

Poll=1 (ON)

Poll=0 (OFF) (default).

wireSpeed=

This feature provides adapter link & data integrity even when attached to a questionable cable and/or switch.

For example; an adapter trying to run 1000 speed on a cat3 cable ordinarily would not link. With the wireSpeed=1, the link will occur at 100Mbs.

Choices are:

wireSpeed=1 (ON) (Default)

wireSpeed=0 (OFF).

Model=

This keyword is to allow the addition of a sub-system ID of a specific NIC so that the driver loads only on the first NIC found with a matching sub-system ID.

e.g., MODEL= 0x14e4

Default = 0

MagicP=

When the MagicP=1 the driver will enable the adapter to wake up the system when a magic packet is received after the system is shutdown. MagicP=0 is the default setting with the adapter having no wake up ability.

Choices are:

MagicP=0 (default)

MagicP=1

Fiber=

The driver has support for the 1000FD fiber adapter. The fiber autonegotiates link with a fiber switch even though it only supports 1000FD. In some cases the user may want to force the adapter to 1000FD.

Choices are:

Fiber=AUTO (default)

Fiber=FORCE

Note

If you modify any adapter parameters, you must reboot the system before the changes take effect. If you make changes and do not reboot, you may experience configuration problems.

A valid autoexec.ncf file is shown below. One set of load and bind commands (in **bold**) is added for each frame type the adapter is configured to support.

```
Set Time Zone = PST8PDT
set Daylight Savings Time Offset = 1
set Start Of Daylight Savings Time = (APRIL SUNDAY FIRST
2:00:00 AM)
set End Of Daylight Savings Time = (OCTOBER SUNDAY LAST
2:00:00 AM)
set Default Time Server Type = SINGLE
set Bindery Context = O=LAN

# WARNING!!
file server name NOVELLSERVER51
# WARNING!!
# If you change the name of this server, you must update
# all the licenses that are assigned to this server.
# Using NWAdmin, double-click on a license object and
# click on the Certificate Assignments button. If the
# old name of this server appears, you must delete it and
# then add the new server name. Do this for all license
# objects.

ServerID 1C8EE2C
LOAD ODINEB.NLM
LOAD TCPIP
LOAD B57 SLOT=2 FRAME=Ethernet_802.2 NAME=B57_1_E82
BIND IPX B57_1_E82 NET=FAFD3D25
LOAD B57 SLOT=2 FRAME=Ethernet_802.3 NAME=B57_1_E83
BIND IPX B57_1_E83 NET=5A2D8D6D
LOAD B57 SLOT=2 FRAME=Ethernet_SNAP NAME=B57_1_ESP
BIND IPX B57_1_ESP NET=477A35BD
LOAD B57 SLOT=2 FRAME=Ethernet_II NAME=B57_1_EII
BIND IPX B57_1_EII NET=C3C8F2E4
BIND IP B57_1_EII ADDR=172.16.1.1 MASK=ff.ff.ff.0

mount all

SEARCH ADD SYS:\JAVA\BIN
SEARCH ADD SYS:\JAVA\NWGFX
```

Removing Drivers from Autoexec.ncf

To remove the drivers from the Autoexec.ncf, locate the Load and Bind command lines associated with the Broadcom driver and remark them out by inserting the # symbol at the beginning of each command line, or by deleting the statement.

Example:

```
# LOAD B57 SLOT=2 FRAME=Ethernet_802.2 NAME=B57_1_E82
# BIND IPX B57_1_E82 NET=FAFD3D25
# LOAD B57 SLOT=2 FRAME=Ethernet_802.3 NAME=B57_1_E83
# BIND IPX B57_1_E83 NET=5A2D8D6D
# LOAD B57 SLOT=2 FRAME=Ethernet_SNAP NAME=B57_1_ESP
# BIND IPX B57_1_ESP NET=477A35BD
# LOAD B57 SLOT=2 FRAME=Ethernet_II NAME=B57_1_EII
# BIND IPX B57_1_EII NET=C3C8F2E4
# BIND IP B57_1_EII ADDR=172.16.1.1 MASK=ff.ff.ff.0
```

Note

If you modify the Autoexec.ncf, you must reboot the system before the changes take effect.

Chapter 7

Installing the Boot Agent Driver Software

This chapter provides procedures for installing the Allied Telesyn Boot Agent Driver Software. It contains the following sections:

- ❑ “Overview” on page 90
- ❑ “Server Setup” on page 92

Overview

The Allied Telesyn Fast Ethernet adapter provides PXE (Preboot Execution Environment) and RPL (Remote Program Load) support. Multi-Boot Agent (MBA) is a software module that allows your networked computer to boot with the images provided by remote servers across the network. The MBA driver complies with the PXE-2.1 specification and is released with both monolithic and split binary images. This provides flexibility to users on different environments where the motherboard may or may not have built-in base-code.

Enabling and Disabling MBA

MBA is enabled by default. To enable MBA, boot up into DOS. Place the Allied Telesyn CD-ROM in the CD drive.

```
d:\diagnostics
```

```
b57udiag -mba [ 0-disable | 1-enable ] -c <devnum>
```

where:

devnum= specific device(s) number (0,1,2,...) to be programmed

Boot Method

By default, MBA detects if the BIOS supports BBS (BIOS Boot Specification). If the BIOS supports BBS, then MBA uses BBS as the boot method. If it does not support BBS, then it uses Int18h instead. However, for some legacy machines equipped with an old BIOS, this may not work. In this case, you must force MBA to use Int18h, Int19h, or BBS as the boot method.

To specify the boot method, press the following keys when you see the startup banner:

Broadcom NetXtreme Ethernet Boot Agent v3.1.29
Copyright (c) 2000-2003 Broadcom Corporation
All rights reserved

1. For Int18h: Ctrl + F8
2. For Int19h: Ctrl + F9
3. For BBS: Ctrl + F10

Setup BIOS

To boot from the network with MBA, make MBA the first bootable device under BIOS. This procedure depends on server BIOS implementation. Please refer to the server's user manual.

Server Setup

This section discusses how to set up a server on a Windows 2000, Windows Server 2003, Windows XP, DOS UNDI/APITEST, and Red Hat Linux systems.

Windows 2000

The current version of Windows 2000 does not include a network driver for the Allied Telesyn Fast Ethernet adapters. To do remote installation with PXE, include a network driver for the adapter as a part of the client's installation image on the server. Please refer to Microsoft Article ID Q246184 - "[How to Add Third-Party OEM Network Adapters to RIS Installations](#)." An example of this RIS installation to modify your inf file, refer to the troubleshooting section under [Software Problems and Solutions](#).

Also, verify that you have the latest Windows 2000 service pack installed on your system.

Note

For Windows 2000, if service pack 3 is installed, no modification to the inf file is necessary.

Windows Server 2003 and Windows XP

The current version of Windows Server 2003 does not include network drivers for the Allied Telesyn Fast Ethernet adapters. To do remote installation with PXE, include a network driver for the adapter as a part of the client's installation image on the server. Please refer to Microsoft Article ID Q246184 - "[How to Add Third-Party OEM Network Adapters to RIS Installations](#)." An example of this RIS installation to modify your inf file, refer to the troubleshooting section under [Software Problems and Solutions](#).

DOS UNDI/ APITEST

To boot in DOS and connect to a network for the DOS environment, download the Intel® PXE PDK from the Intel Web site. This PXE PDK comes with a TFTP/ProxyDHCP/Boot server. The PXE PDK can be downloaded from Intel at <http://developer.intel.com/ial/WfM/tools/pxe/index.htm>.

Red Hat Linux

Red Hat Linux 7.3 (or higher) distribution has PXE server support. It allows you to do a complete Linux installation over the network. Distribution also comes with boot images - boot kernel (vmlinuz) and initial ram disk (initrd). The following images can be found on the CD-ROM disk#1:

/images/pxeboot/vmlinuz

/images/pxeboot/initrd.img

Refer to Red Hat documentation for how to install PXE server on Linux.

In this version, it prompts you to insert a driver disk for drivers that are not part of the standard distribution. You can create a driver disk for the adapter from the image distributed with the Allied Telesyn CD-ROM.

A remote boot does not require a standard Linux network driver for the adapter. After the PXE client downloads the Linux kernel and initial ram disk, the Linux universal driver that came with the Linux distribution binds with the UNDI code of the PXE to form a Linux network driver.

Chapter 8

Installing the NDIS2 Driver Software

This chapter provides procedures for installing the NDIS2 Driver software, and contains the following sections:

- ❑ “Installing the NDIS2 Driver Software for Use on MS-DOS Platforms” on page 96
- ❑ “Using Keywords for the B57.dos Drivers” on page 101

Installing the NDIS2 Driver Software for Use on MS-DOS Platforms

You can run the NDIS2 driver software from an MS-DOS startup disk using Microsoft Network Client 3.0.

Pre-Installation Requirements

Before you can successfully install the NDIS2 driver software, the Allied Telesyn Fast Ethernet adapter must be physically installed in the computer.

Modifying the Startup Disk

To modify the startup disk, perform the following procedure:

1. Edit A:\Net\Protocol.ini with Notepad or a similar text editor.
 - a. Change **DriverName=\$** to **DriverName=B57\$**.
 - b. Remove all other parameter entries under the [MS\$NE2CLONE] or equivalent section such as IOBASE=0x300 or INTERRUPT=3, and so on.

Example Protocol.ini for IP

```
[network.setup]
version=0x3110
netcard=ms$ne2clone,1,MS$NE2CLONE,1
transport=tcpip,TCPIP
lana0=ms$ne2clone,1,tcpip

[MS$NE2CLONE]
DriverName=B57$

[protman]
DriverName=PROTMAN$
PRIORITY=MS$NDISHLP

[tcpip]
NBSessions=6
DefaultGateway=0 ; SubNetMask=255 0 0 0
; IPAddress=192 168 0 1
DisableDHCP=0
DriverName=TCPIP$
```



```
BINDINGS=MS$NE2CLONE
```

```
LANABASE=0
```

Example Protocol.ini for IPX

```
[network.setup]
```

```
version=0x3110
```

```
netcard=ms$ne2clone,1,MS$NE2CLONE,1
```

```
transport=ms$ndishlp,MS$NDISHLP
```

```
transport=ms$nwlink,MS$NWLINK
```

```
lana0=ms$ne2clone,1,ms$nwlink
```

```
lana1=ms$ne2clone,1,ms$ndishlp
```

```
[MS$NE2CLONE]
```

```
DriverName=B57$
```

```
[protman]
```

```
DriverName=PROTMAN$
```

```
PRIORITY=MS$NDISHLP
```

```
[MS$NDISHLP]
```

```
DriverName=ndishlp$
```

```
BINDINGS=ms$ne2clone
```

```
[ms$nwlink]
```

```
DriverName=nwlink$
```

```
FRAME=Ethernet_802.2
```

```
BINDINGS=MS$NE2CLONE
```

```
LANABASE=0
```

Example Protocol.ini for NetBEUI

```
[network.setup]
```

```
version=0x3110
```

```
netcard=ms$ne2clone,1,MS$NE2CLONE,1
```

```
transport=ms$ndishlp,MS$NDISHLP
```

```
transport=ms$netbeui,MS$NETBEUI
```

```
lanana0=ms$ne2clone,1,ms$ndishlp
lanana1=ms$ne2clone,1,ms$netbeui
[MS$NE2CLONE]
DriverName=B57$
[protman]
DriverName=PROTMAN$
PRIORITY=MS$NDISHLP
[MS$NDISHLP]
DriverName=ndishlp$
BINDINGS=MS$NE2CLONE
[MS$NETBEUI]
DriverName=netbeui$
SESSIONS=10
NCBS=12
BINDINGS=MS$NE2CLONE
LANABASE=0
```

2. Edit A:\Net\System.ini.

- a. Change **netcard=** to **netcard=b57.dos**.
- b. Check for references to C:\NET and change **C:\NET** to **A:\NET** if necessary.

Example SYSTEM.INI

```
[network]
sizeworkbuf=1498
filesharing=no
printsharing=no
autologon=yes
computername=MYPEC
lanroot=A:\NET
username=USER1
workgroup=WORKGROUP
```

```

reconnect=yes
dospophotkey=N
lmlogon=0
logondomain=
preferredredir=basic
autostart=basic
maxconnections=8
[network drivers]
netcard=B57.dos
transport=ndishlp.sys,*netbeui
devdir=A:\NET
LoadRMDrivers=yes

```

3. Copy **B57.dos** to **A:\Net**.
4. Create the appropriate Autoexec.bat file in drive A for the chosen protocol as shown below.

For TCP/IP

```

path=a:\net
a:\net\net initialize
a:\net\netbind.com
a:\net\lumb.com
a:\net\tcptsr.exe
a:\net\tinyrfc.exe
a:\net\nmtsr.exe
a:\net\lemsbfr.exe
a:\net\net start basic
net use z: \\SERVERNAME\SHARENAME

```

For IPX

```

SET PATH=A:\NET
A:\NET\net initialize
A:\NET\nwlink

```

```
A:\NET\NET START BASIC
```

```
net use z: \\SERVERNAME\SHARENAME
```

For NetBEUI

```
SET PATH=A:\NET
```

```
A:\NET\NET START BASIC
```

```
net use z: \\SERVERNAME\SHARENAME
```

5. Create a Config.sys file on the startup disk in drive A as shown below.

```
files=30
```

```
device=a:\net\ifshlp.syslastdrive=z
```

Using Keywords for the B57.dos Drivers

The Protocol.ini file contains certain keywords that are used by the B57.dos drivers. These keywords are listed below:

BusNum. Specifies the PCI bus number on which the network controller is located. Requires a decimal number having a value ranging from 0 to 255.

DevNum. Specifies the device number assigned to the network controller when it is configured by the PCI BIOS. Requires a decimal number having a value ranging from 0 to 255.

FuncNum or PortNum. Specifies the PCI function or port number assigned to the network controller. Requires a decimal number having a value ranging from 0 to 7.

Note

The BusNum, DevNum, and FuncNum (or PortNum) keywords are needed when multiple controllers are installed in the computer and when a specific controller must be loaded in a certain order. These keywords are used concurrently and are included for manufacturing purposes. Do not use them unless you are familiar with how to configure PCI devices. To find this information, you will need a PCI device scan utility.

NodeAddress. Specifies the network address used by the network controller. If a multicast address or a broadcast address is specified, the controller uses the default MAC address.

Example

```
[B57]

DriverName = "B57$"

BusNum = 3

DevNum = 14

PortNum = 2

Linespeed = 100

Fuplex = Full

NodeAddress = 001020304050
```


Chapter 9

Troubleshooting

This chapter describes troubleshooting procedures. It contains the following sections:

- ❑ “Hardware Diagnostics” on page 104
- ❑ “Checking the Port LED on the Adapter” on page 105
- ❑ “Troubleshooting Checklist” on page 106
- ❑ “Verifying the Correct Drivers are Loaded” on page 107
- ❑ “Testing Network Connectivity” on page 108
- ❑ “Software Problems and Solutions” on page 111

Hardware Diagnostics

DOS and Windows diagnostic tests are available for testing the adapter hardware under Windows. These tests provide access to the adapter's internal or external diagnostics, where packet information is transmitted across the physical link. Refer to Chapter 10, "DOS Diagnostics" on page 113 or Chapter 11, "Broadcom Advanced Control Suite 2 (BACS 2) Applications" on page 127 for details.

Checking the Port LED on the Adapter

The AT-2711FX Fast Ethernet adapter has one LED: 100.

Before the port LED can provide troubleshooting information, the adapter must be connected to the network (see Chapter 2, “Installing the Hardware” on page 21) and the network drivers for your particular operating system must be installed.

1. Verify that the adapter driver software has been installed and that the adapter is connected to a network.
2. Check to see that the LED operates as described in

The adapter has one LED as described in Table 4.

Table 4. Fiber Optic Port 100 LED Status

State	Description
Green	The port is operating at 100 Mbps and has a valid link.
Flashing	The port is receiving or transmitting network packets at 100 Mbps.

Troubleshooting Checklist

The following checklist provides recommended actions to take to resolve problems installing the AT-2711FX Fast Ethernet adapter or running it in your system.



Warning

Before opening the cabinet of your system for removing or inserting the adapter, please review all precautions outlined under “Reviewing Safety Precautions” on page 23.

- ☐ Inspect all cables and connections. Verify that the cable connections between the adapter and the switch are attached properly. Make sure that the cable length and rating are compliant with the requirements listed in “Connecting the Network Cables” on page 30.”
- ☐ Check the adapter installation by reviewing Chapter 2, “Installing the Hardware” on page 21.
- ☐ Make sure that the adapter board is properly seated in a PCI-E slot. Check for specific hardware problems, such as obvious damage to board components or the PCI-E edge connector.
- ☐ Check the configuration settings and change them if they are in conflict with another device.
- ☐ Make sure that your system is using the latest BIOS.
- ☐ Try inserting the adapter in another slot. If the new position works, the original slot in your system may be defective.
- ☐ Replace the failed adapter with one that is known to work properly. If the second adapter works in the slot where the first one failed, the original adapter is probably defective.
- ☐ Install the adapter in another functioning system and run the tests again. If the adapter passed the tests in the new system, the original system may be defective.
- ☐ Remove all other adapters from the system and run the tests again. If the adapter passes the tests, the other adapters may be causing contention.

Verifying the Correct Drivers are Loaded

The following section describes how to check if the correct drivers are loaded for NetWare and Linux.

NetWare To verify that the NetWare Driver software is loaded correctly, perform the following procedure.

1. To verify that the driver is loaded properly, type:

```
LOAD B57.LAN FRAME_ETHERNET_II NAME=B57_1_EII
```

This command automatically verifies if the link is active. If the link is active, it displays "Link is up".

2. From the command line, type **config** then press **Enter**.

The following status information is displayed:

```
Allied Telesyn AT-2711FXX Fast Ethernet Adapter
```

```
Version:
```

```
Hardware Setting:
```

```
Node Address:
```

```
Frame Type:
```

```
Board Name:
```

```
Lan Protocol: ARP (see note)
```

```
LAN Protocol: IP Addr: (see note)
```

Note

The LAN protocol status appears after assigning an IP address to the adapter (that is, bind).

Linux To verify that the Linux Driver software is loaded correctly, perform the following procedure.

1. To verify that the tg3.o driver is loaded properly, run:

```
lsmod
```

If the driver is loaded, a line similar to the one below appears, where *<size>* is the size of the driver in bytes, and *<n>* is the number of adapters configured. See Table 5.

Table 5. Linux Driver Software Information

Module	Size	Used by
tg3	<i><size></i>	<i><n></i>

Testing Network Connectivity

The following section describes how to test network connectivity for Windows 2000, Windows Server 2003, NetWare, and Linux networks.

Note

When using forced link speeds, make sure that both the adapter and the switch are forced to the same speed. Or, make sure at least one link partner is configured for Auto-Negotiation.

Windows To test the network connectivity for the Windows 2000 Driver software, perform the following procedure.

Use the ping command to determine if network connectivity is working.

1. Select **Run** from the Windows Control Panel

The Run command window opens, as shown in Figure 15.

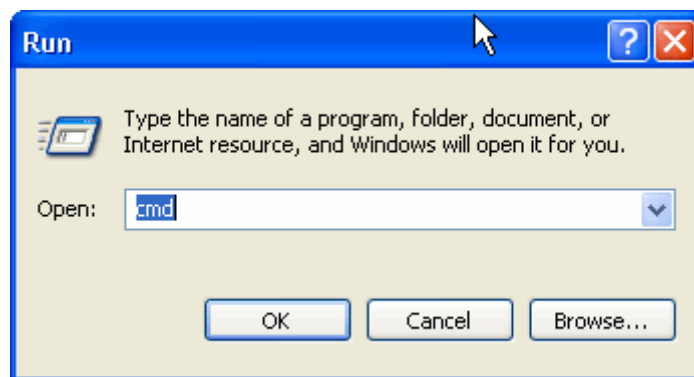


Figure 15. Run Command Window

2. Type **cmd** and click **OK**.
3. Type **ipconfig /all**

The command window opens, as shown in Figure 16 on page 109.

```

D:\>ipconfig /all

Windows IP Configuration

    Host Name . . . . . : whitebox
    Primary Dns Suffix . . . . . : 
    Node Type . . . . . : Unknown
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No
    DNS Suffix Search List. . . . . : netatnic.local

Ethernet adapter Local Area Connection 9:

    Connection-specific DNS Suffix . : netatnic.local
    Description . . . . . : Allied Telesyn AT-2711FX 100Mb Fiber
    Ethernet Adapter #6
    Physical Address. . . . . : 00-10-18-C4-63-38
    Dhcp Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . : Yes
    IP Address. . . . . : 192.162.1.46
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.162.1.1
    DHCP Server . . . . . : 192.162.1.23
    DNS Servers . . . . . : 192.162.1.1
                           192.162.1.23
    Lease Obtained. . . . . : Wednesday, June 28, 2006 9:29:19 AM
    Lease Expires . . . . . : Wednesday, July 05, 2006 1:29:19 PM

D:\>

```

Figure 16. Command Window with pconfig/all displayed

4. Type **ping <IP address>** from the command line, then press **Enter**.

The network connectivity information is displayed, as shown in Figure 17.

```

D:\>ping 192.162.1.1

Pinging 192.162.1.1 with 32 bytes of data:

Reply from 192.162.1.1: bytes=32 time<1ms TTL=64
Reply from 192.162.1.1: bytes=32 time<1ms TTL=64
Reply from 192.162.1.1: bytes=32 time<1ms TTL=64
Reply from 192.162.1.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.162.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

D:\>

```

Figure 17. Command Window with ping displayed

NetWare To ping an IP host on the network to verify a connection has been established, perform the following procedure.

1. From the command line, type **ping <IP address>**, then press **Enter**.

This command displays the packet send/receive status.

Linux To verify that the Ethernet interface is up and running, run 'ifconfig' to check the status of the Ethernet interface. In addition, you can also use the 'netstat -i' command to check the statistics on the Ethernet interface. Consult the manual pages for more information about the 'ifconfig' and 'netstat' commands.

To ping an IP host on the network to verify connection has been established, perform the following procedure.

1. From the command line, type **ping <IP address>**, then press **Enter**.

This command displays the packet send/receive status.

Software Problems and Solutions

Microsoft Remote Installation Service (RIS) Instructions

Problem: Microsoft Remote Installation Service (RIS) installation fails for both Windows 2000 and Windows XP.

Solution: Refer to Microsoft Article Q246184, "How to Add Third-Party OEM Network Adapters to RIS Installations."

Windows 2000 Image

To deploy a Windows 2000 Image, perform the following procedure.

1. Verify that the Windows 2000 RIS server has Service Pack 3 or later installed.
2. Follow the steps described in Microsoft Article Q246184 article at <http://support.microsoft.com/default.aspx?scid=kb%3ben-us%3b246184>.
3. Follow the steps in the Microsoft Article Q246184 at <http://support.microsoft.com/default.aspx?scid=kb%3ben-us%3b246184>.

Skip step 1 since it has been done already.

Windows XP Image

To deploy a Windows XP Image, follow the steps in the Microsoft Article Q246184 at <http://support.microsoft.com/default.aspx?scid=kb%3ben-us%3b246184>.

Linux

This section lists known problems and solutions using Linux Core.

Problem: Compiling the driver fails under SuSE's 7.x.

Solution: If compiling the driver under SuSE's 7.x distributions and errors are reported, follow the general guidelines below to rebuild the kernel source tree:

```
cd /usr/src/linux-<kernel_version>.SuSE
cp /boot/vmlinuz.config .config
cp /boot/vmlinuz.version.h include/linux/version.h
cp /boot/vmlinuz.autoconf.h include/linux/autoconf.h
make oldconfig
make dep
```

where <kernel_version> is the actual kernel version used in the SuSE distribution. Example: /usr/src/linux-2.4.4.SuSE

Now you will need to rebuild the bcm5700 module. You may need to `make clean` if you attempted to build the driver before the previous steps.

```
make clean  
make  
make install
```

Problem: Zero copy performance is low on Red Hat 7.1.

Solution: Red Hat 7.1 loads the ipchains module by default. IPCHAINS is not compatible with Zero Copy. Remove the IPCHAINS module and disable IPCHAINS from the system run level.

Example:

```
rmmod ipchains  
chkconfig ipchains off
```


Chapter 10

DOS Diagnostics

This chapter describes the DOS diagnostics and contains the following sections:

- ❑ “Introduction” on page 114
- ❑ “DOS Prompt Commands” on page 115
- ❑ “Diagnostic Tests” on page 116
- ❑ “Error Messages” on page 123

Introduction

This section provides the information on how to use the DOS diagnostic utilities program on an Allied Telesyn Fast Ethernet adapter.

Commands can be entered from the DOS prompt or the Command Line Interface (CLI), prompt. Otherwise, the parameter is used as an executable command then exits the program.

Prerequisites The DOS diagnostics require the following prerequisites. See Table 6.

Table 6. DOS Diagnostics Prerequisites

OS	DOS 6.22
Software	b57udiag.exe cpu.bin flshdiag.bin cpu05.bin flshdg5x.bin

DOS Prompt Commands

Table 7 lists the DOS prompt commands.

Table 7. DOS Prompt Commands

Command	Description
-c <num>	Specify adapter to be tested and/or modified
-cmd	Enter command mode
-w <value>	Enable/Disable (value = 1/0) WOL in manufacture mode
-mba <value>	Option to select MBA protocol 0 = Disable 1 = Enable
-mbap <value>	Option to select MBA protocol 0 = PXE 1 = RPL 2 = BOOTP
-mbas <value>	Option to select MBA speed 0 = auto 1 = 10HD 2 = 10FD 3 = 100HD 4 = 100FD 6 = 1000FD (fiber)
-firm <file name>	Update devices eeprom based on <file name> image match to HW
-ver	Version of the current software/ eeprom.bin
-pxe <file name>	Programming PXE firmware from file
-elog <file name>	Output error to log file

Diagnostic Tests

The tests are divided into four groups: Register Tests, Memory Tests, Miscellaneous Tests, and Data Tests. They numbered as group 'A', 'B', 'C', and 'D'.

Test Names This section lists the names of the diagnostics tests.

Group A.

- A1. Indirect Register Test
- A2. Control Register Test
- A3. Interrupt Test
- A4. BIST
- A5. PCI Cfg Register Test

Group B.

- B1. Scratch Pad Test
- B2. BD SRAM Test
- B3. DMA SRAM Test
- B4. MBUF SRAM Test
- B5. MBUF SRAM via DMA Test
- B6. External SRAM Test

Group C.

- C1. EEPROM Test
- C2. CPU Test
- C3. DMA Test
- C4. MII Test
- C5. VPD Test
- C6. ASF Test
- C7. ROM Expansion Test

Group D.

- D1. Mac Loopback Test
- D2. Phy Loopback Test
- D3. RJ45 Loopback Test
- D4. MII Miscellaneous Test
- D5. MSI Test

Test Descriptions This section provides descriptions of the diagnostic tests.

A1. Indirect Register Test

Function: Using indirect addressing method, writing increment data into MAC hash Register table and read back for verification. The memory read/write is done 100 times while increment test data.

Default: Test Enabled

A2. Control Register Test

Function: Each Register specified in the configuration contents read only bit and read/write bit defines. The test writing zero and one into the test bits to insure the read only bits are not changed, and read/write bits are changed accordingly.

Default: Test Enabled.

A3. Interrupt Test

Function: This test verifies the interrupt functionality. It enables interrupt and waits for interrupt to occur. It waits for 500ms and reports error if could not generate interrupts.

Default: Enabled

A4. BIST

Function: Hardware Built-In-Self-Test (BIST). This test initiates BIST and waits for the test result returned by hardware.

Default: Due to the intermittent failure, this test is currently disabled by default.

A5. PCI Cfg Register Test

Function: This test verifies the access integrity of the PCI config registers.

B1. Scratch Pad Test

Function: This test tests the scratch pad SRAM on board. The following tests are performed:

Data Pattern Test: Writes test data into the SRAM and reads it back to ensure data is correct. The test data used is 0x00000000, 0xFFFFFFFF, 0xAA55AA55, and 0x55AA55AA.

Alternate Data Pattern Test: Writes test data into the SRAM. Writes complement test data into the next address. Reads back both to insure the

data is correct. After the test, the program reads back data one more time to insure the data stays correct. The test data used is 0x00000000, 0xFFFFFFFF, 0xAA55AA55, and 0x55AA55AA.

Address Test: Writes each address with unique increment data. Read back data to insure data is correct. After fill the entire data with the unique data, the program reads back data again to insure data stays the same.

WalkingOne bit Test: For each address, data one is written and read back for testing. Then shift the data left one bit, so the data becomes two and perform the same test again. It repeats for 32 times until the test bit is shifted out of test data. The same is test is repeated for entire test range.

Pseudo Random Data Test: A pre-calculated pseudo random data is used to write a unique data into each test RAM. After the first pass the test, the program reads back one more time to insure data stays correct.

Default: Enabled

B2. BD SRAM Test

Function: This test tests the BD SRAM. This performs exact the same way of testing as described in B1. Scratch Pad Test.

Default: Enabled

B3. DMA SRAM Test

Function: It tests DMA SRAM by performing the tests described in test B1. The Scratch Pad Test.

Default: Enabled

B4. MBUF SRAM Test

Function: It tests DMA SRAM by performing the tests described in test B1. The Scratch Pad Test.

Default: Enabled

B5. MBUF SRAM via DMA Test

Function: Eight test pattern data are used in the test. They are described below. A 0x1000 sized data buffer is used for this test. Before each pattern test, the buffer is initialized and filled with the test pattern. It then performs size 0x1000 transmit DMA from host buffer to NIC MBUF memory. Verify the data integrity in MBUF against host memory and repeat the DMA for the entire MBUF buffer. Then it performs receive DMA from NIC to host. The 0x1000-byte test buffer is cleared to zero before each receive-DMA. Verify the data integrity and test is repeated for the entire MBUF SRAM range. See Table 8 on page 119.

Table 8. DMA Test Patterns

Test Pattern	Description
"16 00's 16 FF's"	Full the entire host DMA buffer with 16 bytes of 00's and then 16 bytes of FF's.
"16 FF's 16 0's"	Full the entire host DMA buffer with 16 bytes of FF's and then 16 bytes of 00's.
"32 00's 32 FF's"	Full the entire host DMA buffer with 32 bytes of 00's and then 32 bytes of FF's.
"32 FF's 32 00's"	Full the entire host DMA buffer with 32 bytes of FF's and then 32 bytes of 00's.
"00000000's"	Full the entire host DMA buffer with all zeros.
"FFFFFFFF's"	Full the entire host DMA buffer with all FF's.
"AA55AA55's"	Full the entire host DMA buffer with data 0xAA55AA55.
"55AA55AA's"	Full the entire host DMA buffer with data 0xAA55AA55.

Default: Enabled

B6. External SRAM Test

Function: It tests DMA SRAM by performing the tests described in test B1. The Scratch Pad Test.

Default: Disabled

C1. EEPROM Test

Function: An increment test data is used in EEPROM test. It fills the test data into the test range and read back to verify the content. After the test, it fills data with zero to clear the memory.

Default: Enabled

C2. CPU Test

Function: This test opens the file cpu.bin. If file exists and content is good, it loads code to rx and tx CPU and verifies CPU execution.

Default: Enabled

C3. DMA Test

Function: Both high and low priorities DMA are tested. It moves data from the host memory to NIC SRAM, verifies data, and then moves data back to the host memory again to verify data.

Default: Enabled

C4. MII Test

Function: The function is identical to A2. Control Register Test. The test writing zero and one into the test bits to insure the read only bits value are not changed, and read/write bits are changed accordingly.

Default: Test Enabled.

The test attempts to read the register configuration file 'miireg.txt' for the register defines. If the file does not exists, the following table is used. See Table 9.

Table 9. Default Register

Offset	R/O Mask	R/W Mask
0x00	0x0000	0x7180
0x02	0xffff	0x0000
0x03	0xffff	0x0000
0x04	0x0000	0xffff
0x05	0xefff	0x0000
0x06	0x0001	0x0000
0x07	0x0800	0xb7ff
0x08	0xffff	0x0000
0x09	0x0000	0xff00
0x0a	0x7c00	0x0000
0x10	0x0000	0xffbf
0x11	0x3300	0x0000
0x19	0x001f	0x0000
0x1e	0x0000	0xffff
0x1f	0x0000	0xffff

C5. VPD Test

Function: It saves the content of VPD first before perform the test. Once it is done, it writes one of the five pattern test data, 0xFF, 0xAA, 0x55, increment data, or decrement data, into VPD memory. By default, increment data pattern is used. It writes and reads back the data for the entire test range, and then restores the original content.

Default: Disabled

C6. ASF Test

Function: m

1. Reset test.

Setting reset bit, poll for self-clearing. Verify reset value of registers.

2. Event Mapping Test

Setting SMB_ATTN bit. By changing ASF_ATTN LOC bits, verify the mapping bits in TX_CPU or RX_CPU event bits.

3. Counter Test

Clear WG_TO, HB_TO, PA_TO, PL_TO, RT_TO bits by setting those bits. Make sure the bits clear.

Clear Timestamp Counter. Writing a value 1 into each PL, PA, HB, WG, RT counters. Set TSC_EN bit.

Poll each PA_TO bit and count up to 50 times. Check if PL_TO gets set at the end of 50 times. Continue to count up to 200 times. Check if all other TO bits are set and verify Timestamp Counter is incremented.

C7. ROM Expansion Test

Function: This function tests the ability to enable/disable/access the expansion ROM on the device.

D1. Mac Loopback Test

Function: This is internal loopback data transmit/receive test. It initializes the MAC into internal loopback mode and transmits 100 packets. The data should be routed back to the receive channel and received by the receive routine which verifies the integrity of data. One Fast rate is used for this test.

Default: Enabled

D2. Phy Loopback Test

Function: This test is same as D1. Mac Loopback Test except, the data is routed back via physical layer device. One Giga bit rate is used for this test.

Default: Enabled

D3. RJ45 Loopback Test

Function: This is external loopback test. From the UUT point of view, no loopback mode is configured. The data expected to be routed back by RJ45 loopback connector. 100M/s and 1000M/s are used for this test.

Default: Disabled

D4. MII Miscellaneous Test

Function: This function tests the auto-polling and phy-interrupt capabilities. These are the functionalities of the phy.

Default: Enabled

D5. MSI Test

Function:

Default: Disabled

Error Messages

```

/* 0 */      "PASS",
/* 1 */      "Got 0x%08X @ 0x%08X. Expected 0x%08X",
/* 2 */      "Cannot perform task while chip is running",
/* 3 */      "Invalid NIC device",
/* 4 */      "Read only bit %s got changed after writing zero at
              offset 0x%X",
/* 5 */      "Read only bit %s got changed after writing one at
              offset 0x%X",
/* 6 */      "Read/write bit %s did not get cleared after writing
              zero at offset 0x%X",
/* 7 */      "Read/write bit %s did not get set after writing one
              at offset 0x%X",
/* 8 */      "BIST failed",
/* 9 */      "Could not generate interrupt",
/* 10 */     "Aborted by user",
/* 11 */     "Tx DMA:Got 0x%08X @ 0x%08X. Expected 0x%08X",
/* 12 */     "Rx DMA:Got 0x%08X @ 0x%08X. Expected 0x%08X",
/* 13 */     "Tx DMA failed",
/* 14 */     "Rx DMA failed",
/* 15 */     "Data error, got 0x%08X at 0x%08X, expected
              0x%08X",
/* 16 */     "Second read error, got 0x%08X at 0x%08X, expected
              0x%08X",
/* 17 */     "Failed writing EEPROM at 0x%04X",
/* 18 */     "Failed reading EEPROM at 0x%04X",
/* 19 */     "EEPROM data error, got 0x08X at 0x04X, expected
              0x%08X",
/* 20 */     "Cannot open file %s",
/* 21 */     "Invalid CPU image file %s",
/* 22 */     "Invalid CPU image size %d",
/* 23 */     "Cannot allocate memory",

```

```

/* 24 */ "Cannot reset CPU",
/* 25 */ "Cannot release CPU",
/* 26 */ "CPU test failed",
/* 27 */ "Invalid Test Address Range\nValid NIC address is
        0x%08X-0x%08X and exclude 0x%08X-0x%08X",
/* 28 */      "DMA:Got 0x%08X @ 0x%08X. Expected 0x%08X",
/* 29 */ "Unsupported PhyId %04X:%04X",
/* 30 */ "Too many registers specified in the file, max is
        %d",
/* 31 */ "Cannot write to VPD memory",
/* 32 */ "VPD data error, got %08X @ 0x04X, expected %08X",
/* 33 */ "No good link! Check Loopback plug",
/* 34 */ "Cannot TX Packet!",
/* 35 */ "Requested to Tx %d. Only %d is transmitted",
/* 36 */ "Expected %d packets. Only %d good packet(s) have
        been received\n%d unknown packets have been
        received.\n%d bad packets have
        beenreceived.",
/* 37 */ "%c%d is an invalid Test",
/* 38 */ "EEPROM checksum error",
/* 39 */ "Error in reading WOL/PXE",
/* 40 */ "Error in writing WOL/PXE",
/* 41 */ "No external memory detected",
/* 42 */ "DMA buffer %04X is large, size must be less than
        %04X",
/* 43 */ "File size %d is too big, max is %d",
/* 44 */ "Invalid %s",
/* 45 */ "Failed writing 0x%x to 0x%x",
/* 46 */ "",
/* 47 */ "Ambiguous command",
/* 48 */ "Unknown command",
/* 49 */ "Invalid option",

```

```

/* 50 */ "Cannot perform task while chip is not running.
        (need driver)",

/* 51 */ "Cannot open register define file or content is
        bad",

/* 52 */ "ASF Reset bit did not self-cleared",

/* 53 */ "ATTN_LOC %d cannot be mapped to %CX CPU event bit
        %d",

/* 54 */ "%s Register is not cleared to zero after reset",

/* 55 */ "Cannot start poll_ASF Timer",

/* 56 */ "poll_ASF bit did not get reset after
        acknowledged",

/* 57 */ "Timestamp Counter is not counting",

/* 58 */ "%s Timer is not working",

/* 59 */ "Cannot clear bit %s in %CX CPU event register",

/* 60 */ "Invalid "EEPROM_FILENAME" file size, expected %d
        but only can read %d bytes",

/* 61 */ "Invalid magic value in %s, expected %08x but found
        %08x",

/* 62 */ "Invalid manufacture revision, expected %c but
        found %c",

/* 63 */ "Invalid Boot Code revision, expected %d.%d but
        found %d.%d",

/* 64 */ "Cannot write to EEPROM",

/* 65 */ "Cannot read from EEPROM",

/* 66 */ "Invalid Checksum",

/* 67 */ "Invalid Magic value",

/* 68 */ "Invalid MAC address, expected %02X-%02X-%02X-%02X-
        %02X-%02X",

/* 69 */ "Slot error, expected an UUT to be found at
        location %02X:%02X:00",

/* 70 */ "Adjacent memory has been corrupted while testing
        block 0x%08x-0x%08x\nGot 0x%08x @ address
        0x%08x. Expected 0x%08x",

/* 71 */ "The function is not Supported in this chip",

/* 72 */ "Packets received with CRC error",

```

```
/* 73 */ "MII error bits set: %04x",  
/* 74 */ "CPU does not initialize MAC address register  
        correctly",  
/* 75 */ "Invalid firmware file format",  
/* 76 */ "Resetting TX CPU Failed",  
/* 77 */ "Resetting RX CPU Failed",  
/* 78 */ "Invalid MAC address",  
/* 79 */ "Mac address registers are not initialized  
        correctly",  
/* 80 */ "EEPROM Bootstrap checksum error",
```

Chapter 11

Broadcom Advanced Control Suite 2 (BACS 2) Applications

This chapter describes the Broadcom Advanced Control Suite 2 (BACS 2) applications and contains the following sections:

- ❑ “Overview” on page 128
- ❑ “Installing the BACS 2 Application” on page 130
- ❑ “Managing the BACS Application” on page 132
- ❑ “Configuring the BACS 2 Application” on page 134

Note

There are two BACS 2 versions. One is a 32-bit version located in /BACS/IA32 for standard (32-bit) Windows 2000/2003/XP operating systems. The other is a 64-bit version located in /BACS/x64 for Windows 2003/XP 64-bit operating systems.

Overview

The Broadcom Advanced Control Suite 2 (BACS 2) is a graphical user interface that provides useful information about each network adapter that is installed in your computer. The BACS application also enables you to perform detailed tests, diagnostics, and analyses on each adapter, as well as view traffic statistics and set configuration options for each adapter using the following tabs:

- ❑ “Vital Sign Tab” on page 134 provides at-a-glance status reports on all of the LAN devices in your computer.
- ❑ “Resources Tab” on page 136 displays the system resources of the selected device.
- ❑ “Hardware Tab” on page 137 displays the hardware information (the ASIC version and the firmware version) for the selected device.
- ❑ “Advanced Tab” on page 138 shows the AT-2711FX Fast Ethernet adapter driver properties (for the Windows 2003/XP 64-bit operating system only)
- ❑ “Network Test Tab” on page 140 allows you to verify IP network connectivity. This test verifies if the NDIS driver is installed correctly. It also tests connectivity to a gateway or other specified IP address on the same subnet.
- ❑ “Diagnostics Tab” on page 141 allows you to perform comprehensive diagnostics on Broadcom-based network adapters.
- ❑ Cable analysis - This feature, which displays the condition of the copper cabling, is visible but is not supported on the AT-2711FX Fast Ethernet adapter.

The Broadcom Advanced Control Suite 2 (BACS 2) window is shown in Figure 18.

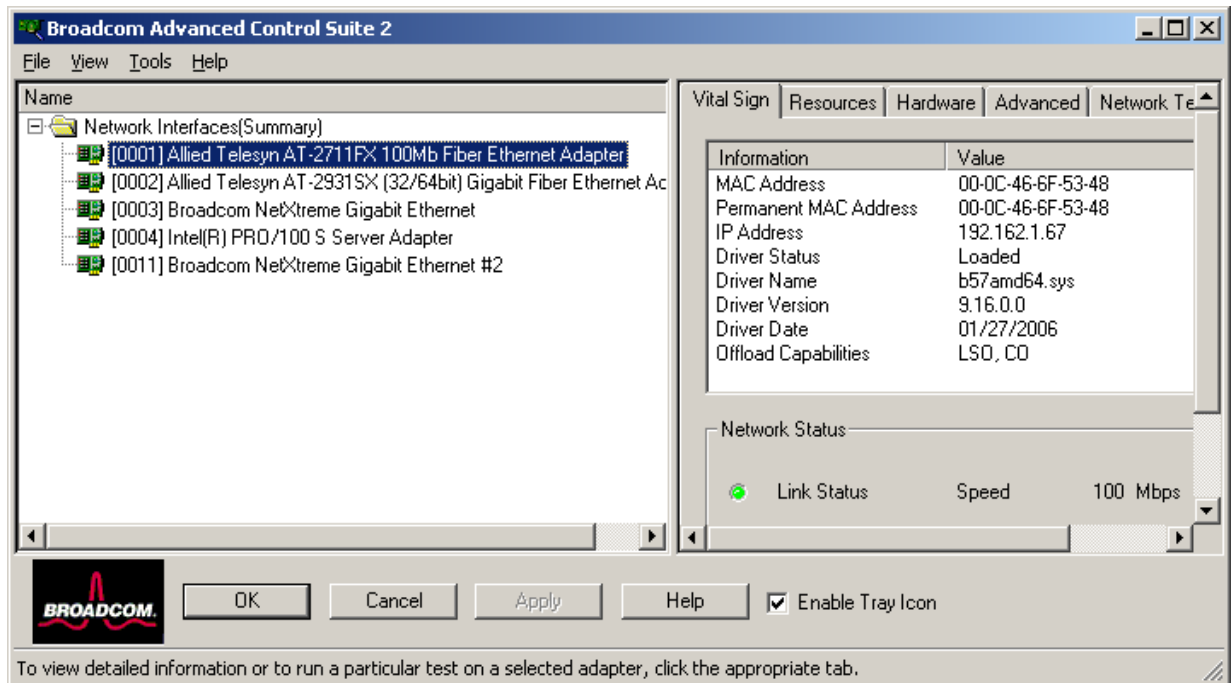


Figure 18. Broadcom Advanced Control Suite 2 Window

**Information
Provided by the
BACS 2
Applications**

The Broadcom Advanced Control Suite 2 lists all of the network adapters in your computer and provides the following information, if available, about each device, as shown in Table 10.

Table 10. BACS Application Information

Driver Status	Driver Version	Frames Rx OK
MAC Address	Driver Date	Team Name
Link Status	Firmware Version	Team Type
IP Address	ASIC Version	VLAN Name
Memory Address	Bus Type	VLAN ID
Physical Address	Bus No.	BASP Tx Packet
Speed	Device No.	BASP Tx Packet Discarded
Duplex	Function No.	BASP Tx Packet Queried
Slot No.	Interrupt Request	BASP Rx Packet
Driver Name	Frames Tx OK	BASP Rx Packet Discarded

Installing the BACS 2 Application

You can install the BACS 2 software through the GUI or by using the silent install option. See the following procedures:

- ❑ “Installing and Using the GUI,” next
- ❑ “Using Silent Installation” on page 130

Note

Before installing the BACS 2 software on a computer running Windows 2000 Advanced Server with Terminal Services, type **change user /install** from the DOS command prompt.

Installing and Using the GUI

To install the BACS 2 application using the GUI (graphical user interface), perform the following procedure.

Note

Before you begin the installation, close all applications, windows, and dialog boxes

4. Double-click **setup.exe** in the appropriate directory (IA32 or x64).
5. Click **Next** in **Broadcom Management Programs Setup**.
6. Read the license agreement and click **Yes**.
7. In **Select Components**, click the component you want to install:
 - ❑ **Control Suite**. Installs the Broadcom Advanced Server Control Suite.
8. Follow the on-screen instructions.

You can start the Control Suite from the Control Panel by double-clicking **Broadcom Control Suite 2**. Or, click **Start**, point to **Programs**, point to **Broadcom**, and then click the **Broadcom Advanced Control Suite 2**.

Using Silent Installation

The recommended installation procedure is to copy the installation files to your hard disk before you run the silent install because the **setup /s** command automatically generates a Setup.log file in the directory where it is run.

Note

Before you begin the installation, close all applications, windows, and dialog boxes.

1. Type **setup /s** and press **ENTER**.

Managing the BACS Application

This section contains the following procedures for managing the BACS application:

- ❑ “Initializing the BACS 2 Application,” next
- ❑ “Updating the BACS Application” on page 132
- ❑ “Removing the BACS Application” on page 132

Initializing the BACS 2 Application

To initialize the BACS 2 application on your computer, perform the following procedure.

1. In the Control Panel, double-click **Broadcom Control Suite 2**.

Or, click **Start**, point to **Programs**, point to **Broadcom**, and then click **Broadcom Advanced Control Suite 2**.

Note

You must install the Allied Telesyn adapters before you initialize the BACS application.

Updating the BACS Application

To update the BACS application on your computer, perform the following procedure.

Note

Before you begin the update, close all applications, windows, and dialog boxes.

1. Double-click **Setup.exe**.
2. Click **Next** in **Broadcom Management Programs Setup**.
3. Read the license agreement and click **Yes**.
4. In **Select Components**, click the component you want to install:
 - ❑ **Control Suite**. Installs the Broadcom Advanced Server Control Suite.
5. Follow the on-screen instructions.

Removing the BACS Application

To remove the BACS application from your computer, perform the following procedure.

1. In the Control Panel, double-click **Add/Remove Programs**.

2. Click **Broadcom Management Programs** and click **Change/Remove** (Windows 2003/XP) or **Add/Remove** (Windows 2000).
3. Click **Next**.
4. In **InstallShield Wizard**, click **Remove**, and then click **Next**.
5. Click **OK** to remove the application and all of its components.
6. Click **OK**.
7. Restart your computer.

Configuring the BACS 2 Application

Start the BACS application and then select a tab in the BACS 2 window that provides the information of interest or access to the tests, diagnostics, analyses, and configuration functions you want to perform. Select from the following tabs:

- ❑ “Vital Sign Tab” on page 134
- ❑ “Resources Tab” on page 136
- ❑ “Hardware Tab” on page 137
- ❑ “Advanced Tab” on page 138
- ❑ “Network Test Tab” on page 140
- ❑ “Diagnostics Tab” on page 141
- ❑ “Statistics Tab” on page 143

Vital Sign Tab

The Vital Sign tab contains information about the adapter and other network adapters that are installed, the link status of the network, and network connectivity. To view this information for any installed network adapter, click the name of the device, as shown in Figure 19.

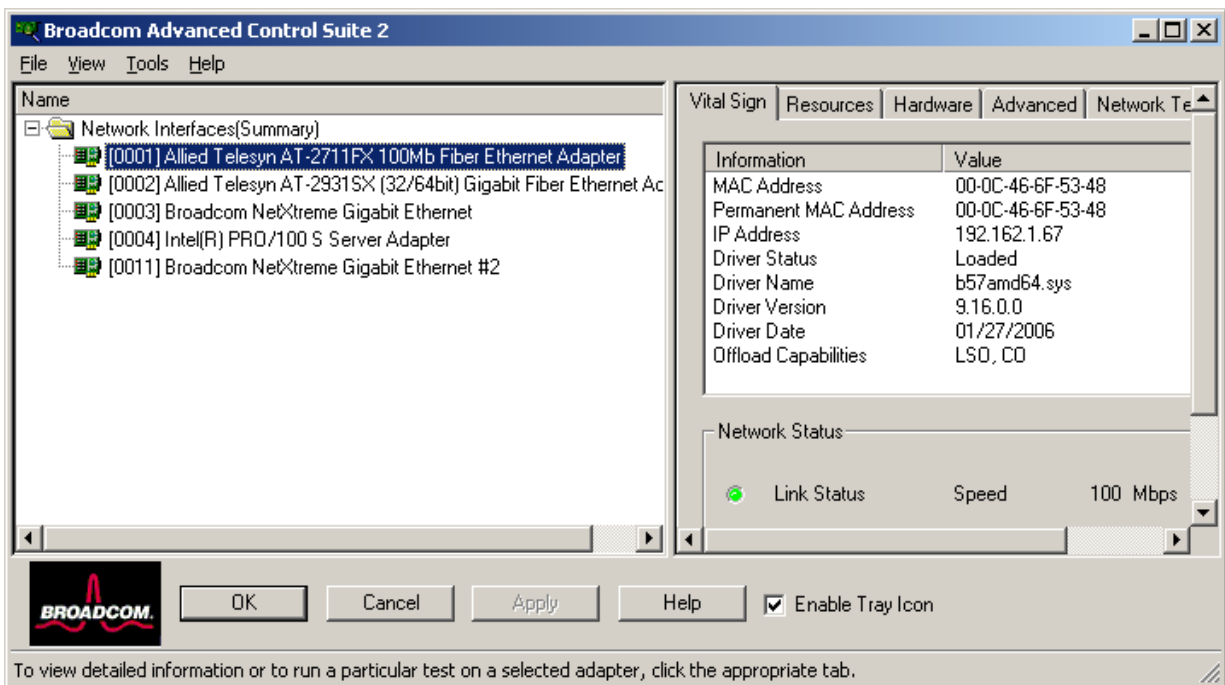


Figure 19. Vital Sign Tab

Note

Information about network adapters made by other vendors is less comprehensive than the information provided about the Allied Telesyn AT-2711FX Fast Ethernet adapter or other Broadcom-based adapters

The Vital Sign tab contains the following fields:

- ❑ **MAC Address.** This address can either be the permanent MAC address or an address assigned by the Locally Administered Address in the Advanced properties tab.
- ❑ **Permanent MAC Address.** This is a physical MAC (media access control) address that is assigned to the device by the manufacturer. The physical address cannot be all 0s.
- ❑ **IP Address.** The network address that is associated with the device. If the IP address is all 0's, the associated driver has not been bound with the Internet Protocol (IP).
- ❑ **Driver Status.** Information about the status of the driver that is associated with the selected controller.
 - **Driver Loaded.** Normal operating mode. The driver that is associated with the device has been loaded by Windows and is functioning.
 - **Driver Not Loaded.** The driver that is associated with the device has not been loaded by Windows.
 - **Information Not Available.** The value is not obtainable from the driver that is associated with the device.
- ❑ **Driver Name/Version/Date.** The file name, version, and creation date of the software driver that is associated with the device.
- ❑ **Offload Capabilities.** The options are:
 - **LSO** (Large Send Offload). The network adapter performs TCP segmentation.
 - **CO** (Checksum Offload). The adapter computes the TCP/IP checksum.
- ❑ **Network Status:** The following network status information is provided:
 - **Link Status.** The indicator is green if a link is established. A red indicator means that a link is not established.
 - **Speed.** The link speed of the device.
 - **Duplex.** The duplex mode in which the device is operating.

Resources Tab

This section describes the Resources tab, as shown in Figure 20.

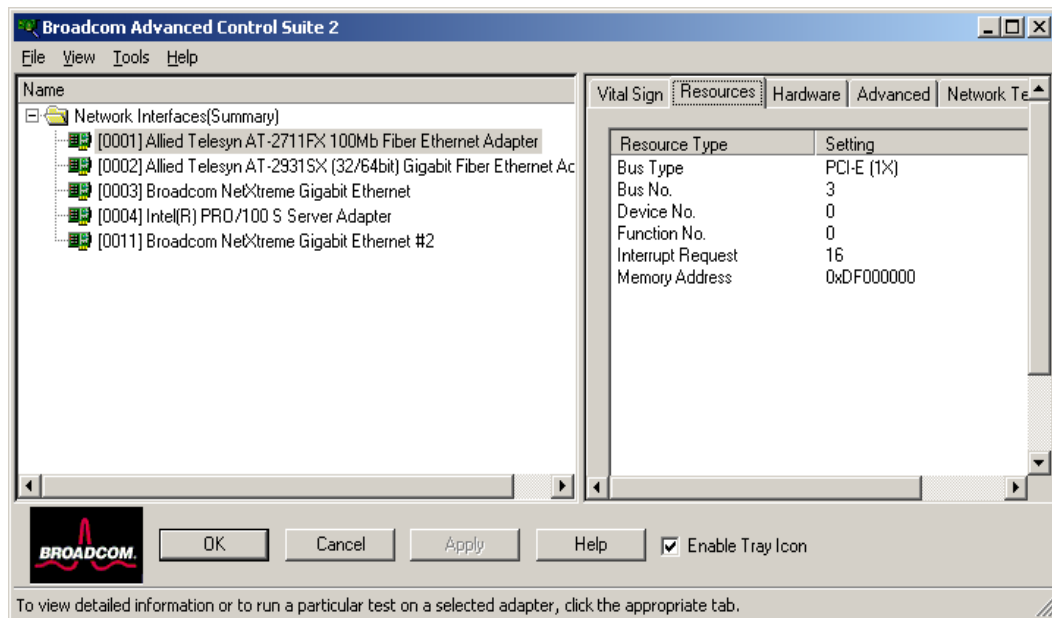


Figure 20. Resources Tab

The Resources tab contains the following fields:

- ❑ **Bus Type.** Indicates the PCI bus type.
- ❑ **Bus No.** Indicates the PCI bus number and the device number for the device.

Example: [0] 14 indicates that the controller resides in PCI bus 0, device 14.
- ❑ **Device No.** The number assigned to the device by the operating system.
- ❑ **Function No.** The port number of the adapter. For a single-port adapter, the function number is 0. For a two-port adapter, the function number for the first port is 0, and the function number for the second port is 1.
- ❑ **Interrupt Request.** The interrupt line number that is associated with the device. Valid numbers range from 2 to 25.
- ❑ **Memory Address.** The memory mapped address that is assigned to the device. This value can never be 0.

Hardware Tab This section provides a description of the Hardware tab, as shown in Figure 21.

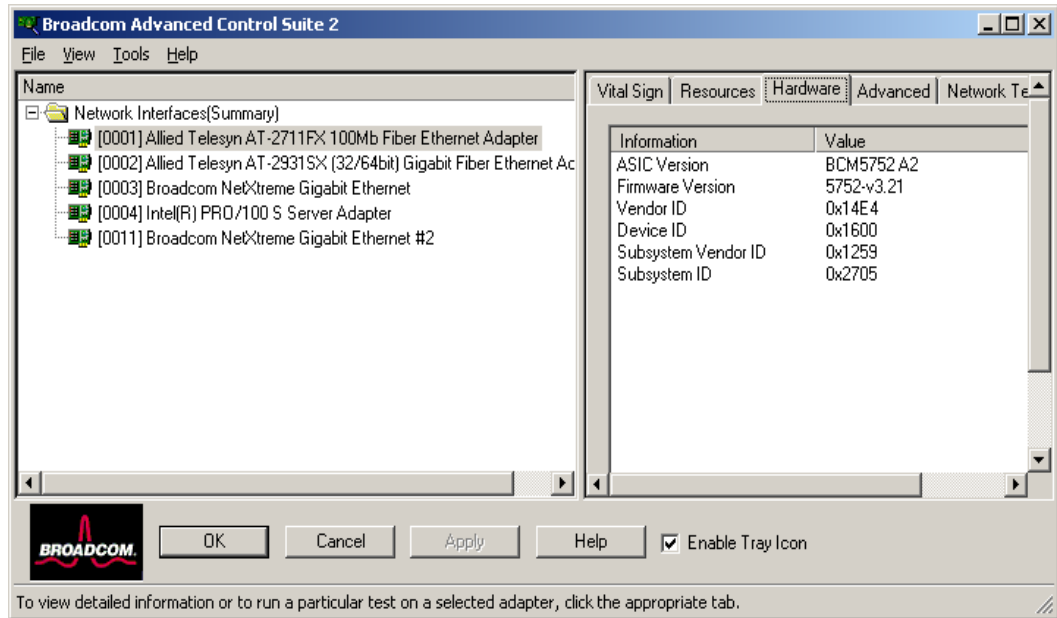


Figure 21. Hardware Tab

The Hardware tab contains the following fields:

- ❑ **ASIC Version.** The chip version of the adapter. This information is not available for devices made by other vendors.
- ❑ **Firmware Version.** The firmware version of the adapter. This information is not available for devices made by other vendors.
- ❑ **Vendor ID.** A unique vendor ID that is registered by the PCI-SIG organization.
- ❑ **Device ID.** A unique device ID that is registered by Broadcom.
- ❑ **Subsystem Vendor ID.** A unique vendor ID that is registered by the PCI-SIG organization.
- ❑ **Subsystem ID.** A unique ID registered by Allied Telesyn, Inc.

Advanced Tab

This section describes the Advanced tab, as shown in Figure 22

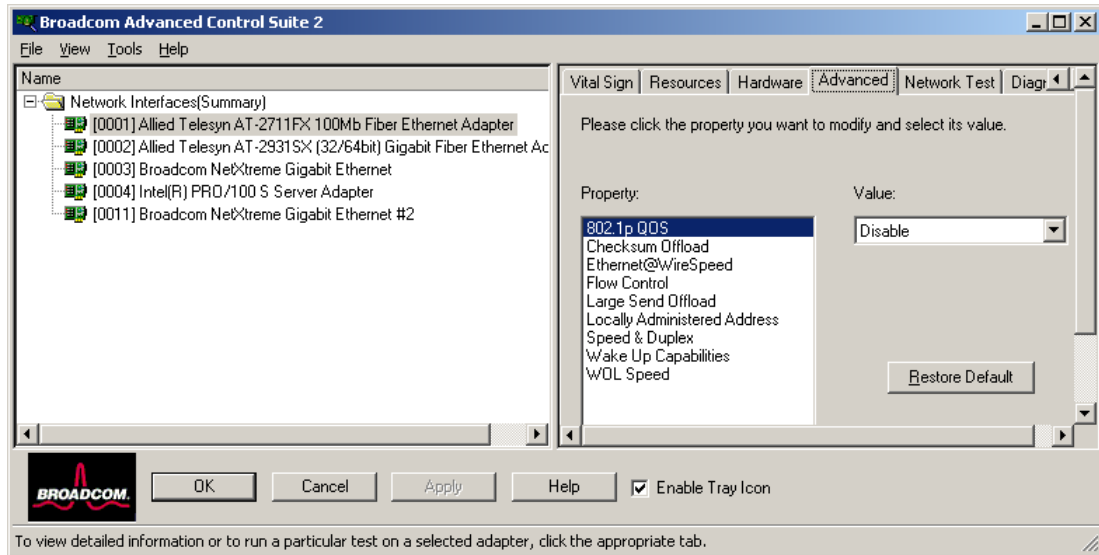


Figure 22. Advanced Tab

The Advanced tab contains the following fields:

- ❑ **802.1p QoS.** The 802.1p QoS property enables quality of service, which is an Institute of Electrical and Electronics Engineering (IEEE) specification that treats different types of network traffic differently to ensure required levels or reliability and latency according to the type of traffic. This property is disabled by default. Unless the network infrastructure supports QoS, do not enable QoS. Otherwise, problems may occur.
- ❑ **Checksum Offload.** Normally the Checksum Offload function is computed by the protocol stack. When you select one of the Checksum Offload property values (other than None), the checksum can be computed by the network adapter.
 - Rx TCP/IP Checksum. Enables receive TCP, IP, and UDP checksum offloading.
 - Tx TCP/IP Checksum. Enables transmit TCP, IP, and UDP checksum offloading.
 - TX/Rx TCP/IP Checksum (default). Enables transmit and receive TCP, IP, and UDP checksum offloading.
 - None. Disables checksum offloading.
- ❑ **Ethernet@Wirespeed™.** This parameter is visible but not supported on the AT-2711FX adapter.

- ❑ **Flow Control.** The Flow Control property enables or disables the receipt or transmission of PAUSE frames. PAUSE frames enable the network adapter and a switch to control the transmit rate. The side that is receiving the PAUSE frame momentarily stops transmitting.
 - Auto (default). PAUSE frame receipt and transmission are optimized.
 - Disable. PAUSE frame receipt and transmission are disabled.
 - Rx PAUSE. PAUSE frame receipt is enabled.
 - Rx/Tx PAUSE. PAUSE frame receipt and transmission are enabled.
 - Tx PAUSE. PAUSE frame transmission is enabled.
- ❑ **Large Send Offload.** Normally the TCP segmentation is done by the protocol stack. When you enable the Large Send Offload property, the TCP segmentation can be done by the network adapter.
 - Disable. Disables Large Send Offload.
 - Enable. (default). Enables Large Send Offload.
- ❑ **Locally Administered Address.** The Locally Administered Address is a user-defined MAC address that is used in place of the MAC address originally assigned to the network adapter. Every adapter in the network must have its own unique MAC address. This locally administered address consists of a 12-digit hexadecimal number.
 - Value. Assigns a unique node address for the adapter.
 - Not Present (Default). Uses the factory-assigned node address on the adapter.

The appropriate assigned ranges and exceptions for the locally administered address include the following:

 - * The range is 0000 0000 0001 to FFFF FFFF FFFD.
 - * Do not use a multicast address (least significant bit of the high byte = 1).
 - * Do not use all 0s or all F's.
- ❑ **Speed & Duplex.** The Speed & Duplex property sets the connection speed and mode to that of the network. Note that Full-Duplex mode allows the adapter to transmit and receive network data simultaneously.
 - 100 Mb Full. Sets the speed at 100 Mbit/s and the mode to

Full-Duplex.

- 100 Mb Half. Sets the speed at 100 Mbit/s and the mode to Half-Duplex.

100 Mb duplex settings force the network adapter to connect to the network in Half-Duplex mode. The network adapter may not function if the network is not configured to operate at the same mode.

- ☐ **Wake Up Capabilities.** The Wake Up Capabilities property enables the network adapter to wake up from a low-power mode when it receives a network wake-up frame. Two types of wake-up frames are possible: Magic Packet and Wake Up Frame.
 - Both (default). Selects both Magic Packet and Wake Up Frame as wake-up frames.
 - Magic Packet. Selects Magic Packet as the wake-up frame.
 - None. Selects no wake-up frame.
 - Wake Up Frame. Selects Wake Up Frame as the wake-up frame and allows the network adapter to wake the system when an event such as a ping or an Address Resolution Protocol (ARP) request is received.
- ☐ **WOL Speed.** The WOL Speed property sets the speed at which the network adapter connects to the network while the network adapter is in Wake on LAN mode. By default, the WOL Speed property is set to Auto.
 - 10 Mb. This is not supported on the AT-2711FX Fast Ethernet adapter.
 - 100 Mb. Sets the speed to 100 Mbit/s.
 - Auto (default). Sets the speed for optimum network connection.

Network Test Tab

In the Network Test tab, you can verify IP network connectivity. This test verifies if the driver is installed correctly and tests connectivity to a gateway or other specified IP address on the same subnet. The Network

test uses TCP/IP, as shown in Figure 23.

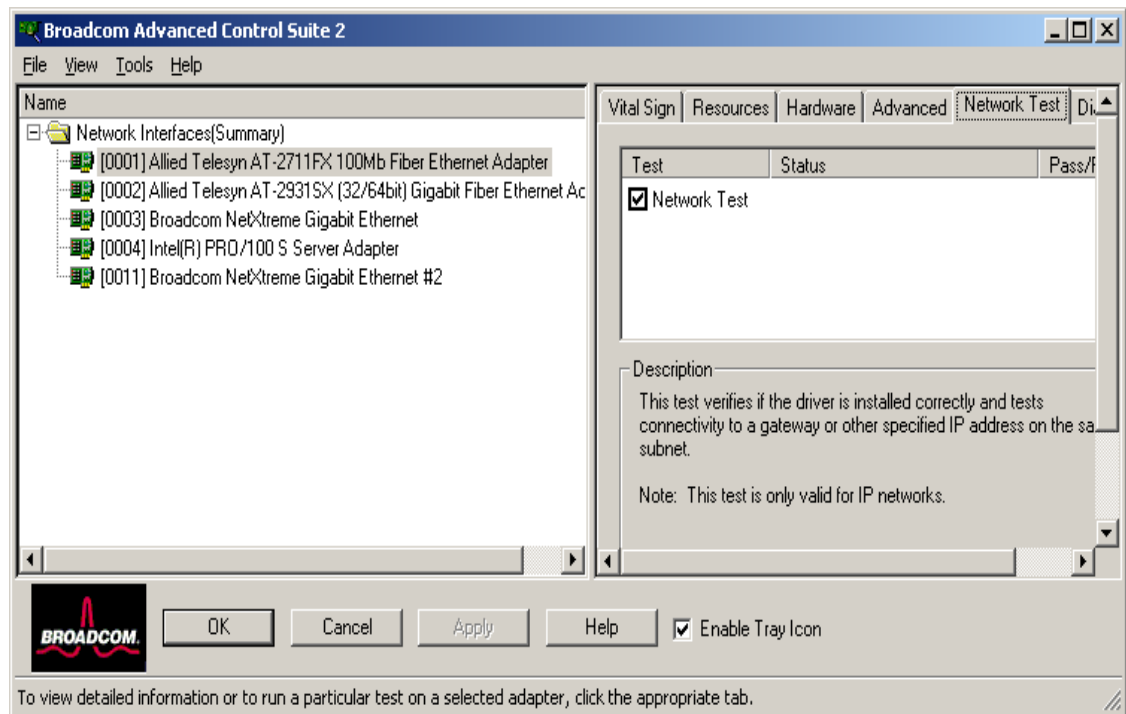


Figure 23. Network Test Tab

Diagnostics Tab

On the Diagnostics tab you can perform diagnostic tests on Allied Telesyn network adapters. You use this function to test the physical components of the adapter, as shown in Figure on page 142.

Note

The network connection is temporarily lost when the diagnostic tests are running.

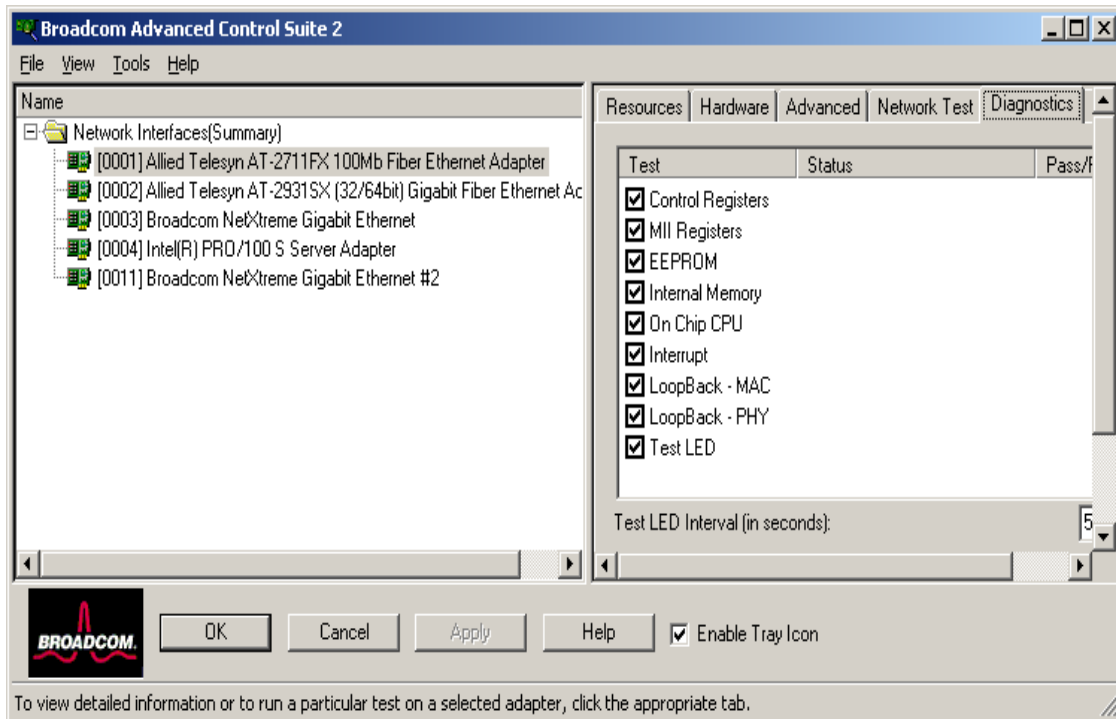


Figure 24. Diagnostics Tab

The Diagnostics tab contains the following fields:

- ❑ **Control Registers.** This test verifies the read and write capabilities of the network controller registers by writing various values to the registers and verifying the results. The device driver uses these registers to perform network functions such as sending and receiving information. If the test fails, the device may not work properly.
- ❑ **MII Registers.** This test verifies the read and write capabilities of the registers of the physical layer (PHY). This field is not displayed for fiber adapters.
- ❑ **EEPROM.** This test verifies the content of the electrically erasable programmable read-only memory (EEPROM) by reading a portion of the EEPROM and computing the checksum. The test fails if the computed checksum is different from the checksum stored in the EEPROM. An EEPROM image upgrade does not require a code change for this test.
- ❑ **Internal Memory.** This test verifies that the internal memory of the device is functioning properly. The test writes patterned values to the memory and reads back the results. The test fails if an erroneous value is read back. The device cannot function without its internal memory.

- ❑ **On-Chip CPU.** This test verifies the operation of the internal CPUs in the device.
- ❑ **Interrupt.** This test verifies that the NDIS driver is able to receive interrupts from the device.
- ❑ **Loopback MAC.** This test verifies that the Network Device Driver Interface Specification (NDIS) driver is able to send packets to and receive packets from the network microcontroller.
- ❑ **Loopback PHY.** This test verifies that NDIS is able to send packets to and receive packets through the network microcontroller and the integrated PHY chip.
- ❑ **Test LED.** This test causes all of the LEDs to blink 5 times for the purpose of identifying the device.

Cable Analysis Tab

This tab does not support the AT-2711FX Fast Ethernet adapter.

Statistics Tab

On the Statistics Tab, shown in Figure 25, you can view traffic statistics for both Allied Telesyn network devices and network devices made by other vendors. Statistical information and coverage are more comprehensive for the Allied Telesyn adapters.

Note

If an adapter is disabled, team statistics are not displayed.

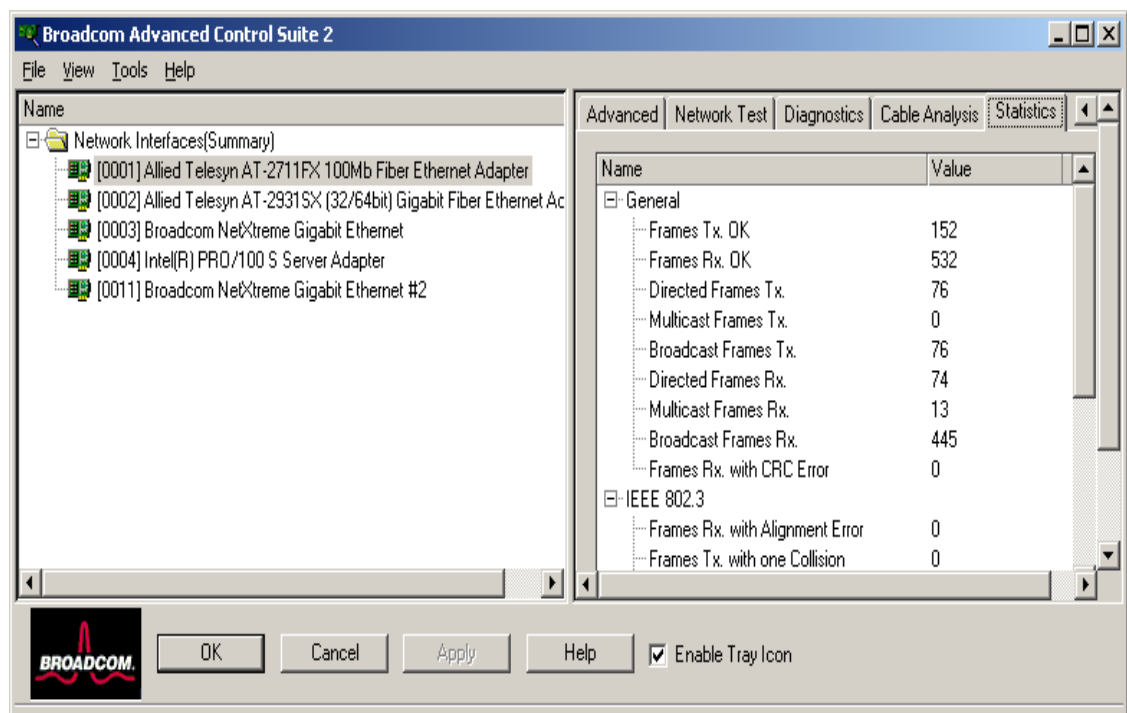


Figure 25. Statistics Tab

General Statistics

Definitions of the general statistics parameters are provided below.

- ❑ **Frames Tx OK.** A count of frames that are successfully transmitted. This counter is incremented when the transmit status is reported as **Transmit OK**.
- ❑ **Frames Rx OK.** A count of frames that are successfully received (**Receive OK**). This does not include frames received with frame-too-long, frame check sequence (FCS), length or alignment errors, or frames lost due to internal MAC sublayer errors. This counter is incremented when the receive status is reported as **Receive OK**.
- ❑ **Directed Frames Tx.** A count of directed data frames that are successfully transmitted.
- ❑ **Multicast Frames Tx.** A count of frames that are successfully transmitted (as indicated by the status value **Transmit OK**) to a group destination address other than a broadcast address.
- ❑ **Broadcast Frames Tx.** A count of frames that were successfully transmitted (as indicated by the transmit status **Transmit OK**) to the broadcast address. Frames transmitted to multicast addresses are not broadcast frames and, therefore, are excluded.
- ❑ **Directed Frames Rx.** A count of directed data frames that are successfully received.
- ❑ **Multicast Frames Rx.** A count of frames that are successfully received and are directed to an active nonbroadcast group address. This does not include frames received with frame-too-long, FCS, length errors, alignment errors, or frames lost due to internal MAC sublayer errors. This counter is incremented as indicated by the **Receive OK** status.
- ❑ **Broadcast Frames Rx.** A count of frames that are successfully received and are directed to a broadcast group address. This count does not include frames received with frame-too-long, FCS, length errors, alignment errors, or frames lost due to internal MAC sublayer errors. This counter is incremented as indicated by the **Receive OK** status.

IEEE 802.3 Statistics

Definitions of the IEEE 802.3 statistics parameters are provided below.

- ❑ **Frames Rx with Alignment Error.** A count of frames that are not an integral number of octets in length and do not pass the FCS check. This counter is incremented when the receive status is reported as **Alignment Error**.
- ❑ **Frames Tx with one Collision.** A count of frames that are involved in a single collision and are subsequently transmitted successfully. This

counter is incremented when the result of a transmission is reported as **Transmit OK** and the attempt value is 2.

- ❑ **Frames Tx with more than one Collision.** A count of frames that are involved in more than one collision and are subsequently transmitted successfully. This counter is incremented when the transmit status is reported as **Transmit OK**, and the value of the attempts variable is greater than 2 and less or equal to the attempt limit.
- ❑ **Frames Tx after Deferral.** A count of frames whose transmission was delayed on the first attempt because the medium was busy. The frames involved in any collision are not counted.

Custom Statistics

Definitions of the custom statistics parameters are provided below.

Note

Custom statistics are available only for an enabled adapter.

- ❑ **Frames size less than 64-byte with bad FCS.** The number of frames with a size less than 64 bytes with bad FCS.
- ❑ **MAC Rx w/ Pause Command and Length = 0.** MAC control frames with the **pause** command and a length equal to 0.
- ❑ **MAC Rx w/ Pause Command and Length greater than 0.** MAC control frames with the **pause** command and a length greater than 0.
- ❑ **MAC Rx w/ no Pause Command.** MAC control frames with no **pause** command.
- ❑ **MAC Sent X-on.** MAC Transmit with X-on was on.
- ❑ **MAC Sent X-off.** MAC Transmit with X-on was off.
- ❑ **Large Send Offload Transmit Request -** MAC Transmit with Large Send Offload.

Appendix A

Specifications

Physical Specifications

Dimensions:	56.15cm x 119.91cm (2.21in. x 4.72in.)
Weight:	50 g (.12 lb.)

Environmental Specifications

Operating Temperature:	0°C to 40°C (+32°F to +°F)
Storage Temperature:	-25°C to +70°C (-°F to +°F)
Operating Humidity:	90% noncondensing
Operating Altitude Range:	3048 m (10,000 ft.)
Operating Shock:	10g, 1/2 sine wave, 11 msec
Storage Shock:	60g, 1/2 sine wave, 11 msec
Operating vibration, peak to peak displacement	0.005 in. max (5 to 32 Hz)
Storage vibration, peak to peak displacement	0.1 in. max (5 to 17 Hz)
Operating vibration, peak acceleration:	0.25g (5 to 500 Hz) (Sweep Rate = 1 octave/ min.)
Storage vibration, peak acceleration	0.25g (5 to 500 Hz) (Sweep Rate = 1 octave/ min.)

Power Specifications

Operating Voltage:	+3.3V +/-10%
Power Consumption:	3.86 Watts, 1.17A@ +3.3V

Maximum Cabling Distances

62.5/125 μm multimode fiber cable: Up to 2000 m

50/125 μm multimode fiber cable: Up to 2000 m

Appendix B

Cleaning Fiber Optic Connectors

The fiber optic connector consists of a fiber optic plug and its adapter. The end of the fiber optic cable is held in the core of the ferrule in the plug. Light signals are transmitted through the core of the fiber. Even minor smudges or dirt on the end face of the fiber, completely invisible to the naked eye, can disrupt light transmission and lead to failure of the component or of the entire system. Therefore, it is of utmost importance to clean all fiber optic connectors before use.

Figure 26 shows the ferrule in an SC connector.

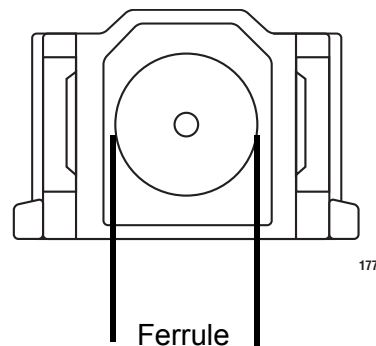


Figure 26. Ferrule in an SC Connector Plug

Figure 27 shows part of the end face of an unclean and clean ferrule.

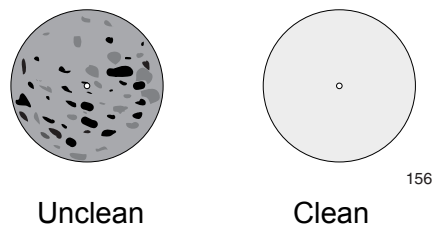


Figure 27. Unclean and Clean Ferrule

This appendix provides the following procedures

- ❑ “Using a Cartridge-Type Cleaner” on page 150
- ❑ “Using a Swab” on page 152

Using a Cartridge-Type Cleaner

Fiber optic cartridge cleaners are available from many vendors and are typically called “cartridge cleaners,” as shown in Figure 28.



Figure 28. Cartridge Cleaner

Note

Do not use compressed air or aerosol air to clean a fiber optic connector.

To clean a fiber optic connector using a cartridge cleaner, perform the following procedure.

8. With one hand, hold the cartridge cleaner and push the lever on the cleaning cartridge in the direction of the arrow to expose the cleaning surface, as shown in Figure 29.
9. Place the ferrule tip on the exposed cleaning surface and rub the ferrule in a downward direction, as shown in Figure 29.

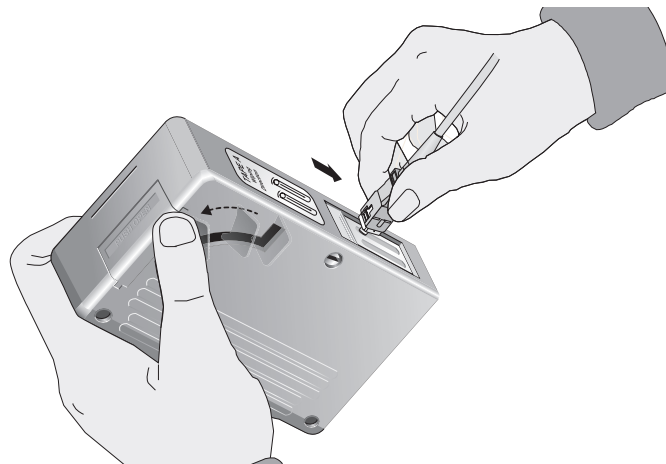


Figure 29. Rubbing the Ferrule Tip on the Cleaning Surface

Note

Rub the ferrule tip on the cleaning surface in one direction only.

10. When you reach the end of the cleaning surface, pick up the ferrule tip, rotate and place it at the top and rub downwards at least 2 times.



Caution

Failing to pick up the ferrule tip when you reach the bottom of the cleaning surface can result in static electricity that can damage the fiber optic cable.

11. If desired, repeat steps 3 and 4.
12. If a fiber inspection scope is available, use the scope to inspect the ferrule end face to make sure that it is clean.
13. Reconnect the cable to the port or protect the ferrule tip with a dust cap.

Note

Always keep a dust cap on a fiber optic cable when it is not in use.

Note

Do not touch the end face of the ferrule in the connector.



Warning

Do not stare into the laser beam. ⚠ 2



Warning

Do not look directly at the cable ends or inspect the cable ends with an optical lens. ⚠ 31

Using a Swab

Specially treated swabs (stick cleaners) are available for cleaning inside connector adapters or hard-to-reach ferrule tips. These swabs, often referred to as “lint free” or “alcohol free” swabs, are available from many vendors, as shown in Figure 30. Stick cleaners are available in both 2.5 mm and 1.25 mm sizes for use on SC and MU connectors respectively.

Note

NEVER use a household cotton swab and/or alcohol to clean a fiber optic connector. This may leave a residue on the ferrule tip.

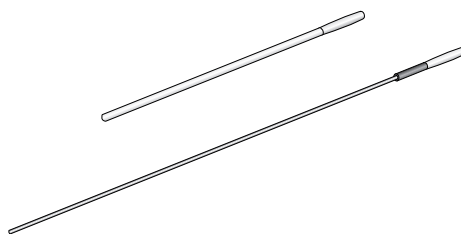


Figure 30. Lint-Free and Alcohol-Free Swabs

Note

Do not use compressed air or aerosol air to clean a fiber optic connector.

To clean a recessed ferrule using a swab, perform the following procedure.

1. Insert the swab into the adapter as shown in Figure 29 and rub the ferrule tip with the swab.

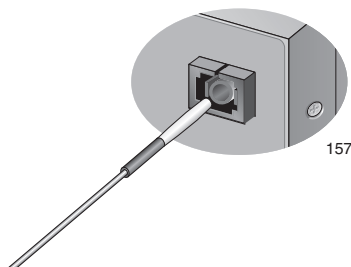


Figure 31. Cleaning a Recessed Ferrule

2. If desired, repeat step 1.

3. If a fiber inspection scope is available, use the scope to inspect the connector to make sure that it is clean and to check for scratches, pits, or other problems that may affect performance.

Note

Always keep a dust cap on a fiber optic cable when it is not in use.



Warning

Do not stare into the laser beam. ⚠ 2



Warning

Do not look directly at the cable ends or inspect the cable ends with an optical lens. ⚠ 31

Appendix C

Translated Safety Statements

Important: This appendix contains multiple-language translations for the safety statements in this guide.

Wichtig: Dieser Anhang enthält Übersetzungen der in diesem Handbuch enthaltenen Sicherheitshinweise in mehreren Sprachen.



Importante: Este apéndice contiene traducciones en múltiples idiomas de los mensajes de seguridad incluidos en esta guía.

Important: Cette annexe contient la traduction en plusieurs langues des instructions de sécurité figurant dans ce guide.







Importante: Questa appendice contiene traduzioni in più lingue degli avvisi di sicurezza di questa guida.



Важно: Данное приложение содержит переводы с разных языков по безопасности, приведенное в данном руководстве.







Laser Safety Notices





- 1  **Warning:** Class 1 Laser product.
- 2  **Warning:** Do not stare into the laser beam.

Electrical Safety Notices



- 3  **Warning:** To prevent electric shock, do not remove the cover. No user-serviceable parts inside. This unit contains hazardous voltages and should only be opened by a trained and qualified technician. To avoid the possibility of electric shock, disconnect electric power to the product before connecting or disconnecting the LAN cables.
- 4  **Warning:** Do not work on equipment or cables during periods of lightning activity.
- 5  **Warning:** Power cord is used as a disconnection device. To de-energize equipment, disconnect the power cord.
- 6  **Warning:** Class I Equipment. This equipment must be earthed. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.
- 7 Pluggable Equipment. The socket outlet shall be installed near the equipment and shall be easily accessible.
- 8  **Caution:** Air vents must not be blocked and must have free access to the room ambient air for cooling.
- 9 **Warning:** Operating Temperature. This product is designed for a maximum ambient temperature of 40° degrees C.
- 10 All Countries: Install product in accordance with local and National Electrical Codes.
- 11  **Warning:** As a safety precaution, install a circuit breaker with a minimum value of 15 Amps between the equipment and the DC power source.

Always connect the wires to the LAN equipment first before you connect the wires to the circuit breaker. Do not work with HOT feeds to avoid the danger of physical injury from electrical shock. Always be sure that the circuit breaker is in the OFF position before connecting the wires to the breaker.
- 12  **Warning:** Do not strip more than the recommended amount of wire. Stripping more than the recommended amount can create a safety hazard by leaving exposed wire on the terminal block after installation.
- 13  **Warning:** When installing this equipment, always ensure that the frame ground connection is installed first and disconnected last.



- 14  **Warning:** Check to see if there are any exposed copper strands coming from the installed wire. When this installation is done correctly there should be no exposed copper wire strands extending from the terminal block. Any exposed wiring can conduct harmful levels of electricity to persons touching the wires.
- 15 This system works with positive grounded or negative grounded DC systems.
- 16 **Warning:** Only trained and qualified personnel are allowed to install or to replace this equipment.
- 17  **Caution:** The attached mounting brackets must be used to securely mount the device on the wall.
- 18  **Caution:** Do not install in direct sunlight, or a damp or dusty place.
- 19  **Caution:** Do not expose the gateway device to moisture or water.
- 20  **Caution:** If the gateway device is installed indoors, make sure that the site is a dust-free environment. The site should provide for easy access to the ports of the gateway device. This will make it easy for you to connect and disconnect cables, as well as view the LEDs.
- 21 **Warning:** The power source for the gateway unit should be located near the unit and should be easily accessible.
- 22  **Caution:** To allow proper cooling of the gateway device, make sure that the air flow around the unit and through its heatsink cooling fins on the rear is not restricted.
- 23 Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- 24 **Caution:** Risk of explosion if battery is replaced by an incorrect type. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
- Attention:** Le remplacement de la batterie par une batterie de type incorrect peut provoquer un danger d'explosion. La remplacer uniquement par une batterie du même type ou de type équivalent recommandée par le constructeur. Les batteries doivent être éliminées conformément aux instructions du constructeur.
- 25 **Warning:** For centralized DC power connection, install only in a restricted access area.
- 26 A tray cable is required to connect the power source if the unit is powered by centralized DC power. The tray cable must be a UL listed Type TC tray cable and rated at 600 V and 90 degrees C, with three conductors, minimum 14 AWG.

- 27 **Warning:** Mounting of the equipment in the rack should be such that a hazardous condition is not created due to uneven mechanical loading.
- 28  **Warning:** Remove all metal jewelry, such as rings and watches, before installing or removing a line card from a powered-on chassis.
- 29 Use dedicated power circuits or power conditioners to supply reliable electrical power to the device.
- 30 **Warning:** The chassis may be heavy and awkward to lift. Allied Telesyn recommends that you get assistance when mounting the chassis in an equipment rack.
- 31  **Warning:** Do not look directly at the fiber optic cable ends or inspect the cable ends with an optical lens.
- 32  **Warning:** This unit might have more than one power cord. To reduce the risk of electric shock, disconnect all power cords before servicing the unit.
- 33 **Warning:** Only trained and qualified personnel are allowed to install or to replace this equipment.
- 34 **Warning:** The power input must be provided from SELV source only, per IEC 60950. Do not connect to a centralized DC battery bank.
- 35 UL recognized wires of 18 AWG minimum should be provided by the installer.
- 36 UL recognized wires of 22 AWG minimum should be provided by the installer.
- 37 **Caution:** Power to the hub must be sourced only from the adapter.
- 38 If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than the room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).
- 39 **Caution:** Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- 40  **Warning:** Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuits (e.g., use of power strips).






Telecommunications Compliance Notices

- 41  **Warning:** When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electronic shock, and injury to persons, including the following:
- Do not use this product near water, for example, near a bathtub, washbowl, kitchen sink, or laundry tub in a wet basement or near a swimming pool.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- 42  **Warning:** Before connecting to the telephony (TEL) ports on the gateway device, make sure to disconnect the Public Switch Telephone Network (PSTN) feed to the premises.
- 43 **Warning:** To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.









Lasersicherheitshinweise





- 1  **Achtung:** Laserprodukt der Klasse 1.
- 2  **Achtung:** Blicken Sie nicht in den Laserstrahl.

Elektrische Sicherheitshinweise


- 3  **Achtung:** Um Stromschläge zu vermeiden, darf die Abdeckung nicht entfernt werden. Die Ausrüstung enthält keine benutzerwartbaren Teile. Diese Einheit führt gefährliche Spannungen und sollte nur durch einen ausgebildeten und qualifizierten Techniker geöffnet werden. Zur Vermeidung der Möglichkeit von Stromschlägen ist die Stromversorgung des Produkts vor dem Anschließen oder Abtrennen von LAN-Kabeln zu unterbrechen.
- 4  **Achtung:** Bei Gewittern und Blitzaktivität dürfen keine Arbeiten an der Ausrüstung oder an Kabeln erfolgen.
- 5  **Achtung:** Das Stromkabel dient als Abtrennungselement. Zum Abschalten der Ausrüstung Stromkabel abziehen.
- 6  **Achtung:** Ausrüstung der Klasse I. Diese Ausrüstung muss geerdet werden. Der Stromstecker muss an eine vorschriftsmäßig geerdete Steckdose angeschlossen werden. Eine inkorrekt verdrahtete Steckdose kann gefährliche Spannungen auf zugängliche Metallteile aufbringen.
- 7 Steckbare Ausrüstung. Die Steckdose sollte in der Nähe der Ausrüstung installiert und leicht zugänglich sein.
- 8  **Vorsicht:** Belüftungsöffnungen dürfen nicht blockiert werden und müssen zur Kühlung durch die Umluft frei zugänglich sein.
- 9 **Achtung:** Betriebstemperatur. Dieses Produkt ist für eine maximale Umgebungstemperatur von 40° C konzipiert.
- 10 Alle Länder: Dieses Produkt muss entsprechend den örtlichen und nationalen Elektrizitätsvorschriften installiert werden.
- 11  **Achtung:** Als Sicherheitsvorkehrung sollte ein Überlastschalter mit einem minimalen Nennwert von 15 Ampere zwischen der Ausrüstung und der Gleichstromversorgung installiert werden.

Vor dem Anschluss der Kabel am Überlastschalter sollten stets zuerst die Kabel an die LAN-Ausrüstung angeschlossen werden. Zur Vermeidung von Verletzungen in Folge von Stromschlag sollte nicht mit SPANNUNGSFÜHRENDEN Versorgungen gearbeitet werden. Vor dem Anschluss der Kabel an den Überlastschalter ist stets Sorge zu tragen, dass der Überlastschalter AUSGESCHALTET ist.

- 12  **Achtung:** Nicht mehr als die empfohlene Kabellänge abisolieren. Durch das Abisolieren von mehr als der empfohlenen Länge können gefährliche blanke Drähte aus dem Anschlussblock hervorragen.
- 13  **Achtung:** Beim Installieren dieser Ausrüstung ist stets darauf zu achten, dass die Rahmenerdung zuerst angeschlossen und zuletzt abgetrennt wird.
- 14  **Achtung:** Das installierte Kabel muss auf etwaige freiliegende Kupferlitzen überprüft werden. Bei der korrekten Installation sollten keine freiliegenden Kupferdrahtlitzen aus dem Anschlussblock herausragen. Jegliche freiliegende Drähte können für Personen, die sie berühren, gefährlichen Strom führen.
- 15 Dieses System kann in Verbindung mit positiv geerdeten oder negativ geerdeten Gleichstromsystemen verwendet werden.
- 16 **Achtung:** Das Installieren und der Austausch dieser Ausrüstung ist nur ausgebildetem und qualifiziertem Personal gestattet.
- 17  **Vorsicht:** Mechanische Montage. Zur sicheren Wandmontage des Geräts sind die beiliegenden Montageklammern zu verwenden.
- 18  **Vorsicht:** Das Gerät darf nicht an feuchten, staubigen oder direktem Sonnenlicht ausgesetzten Orten installiert werden.
- 19  **Vorsicht:** Das Gateway-Gerät darf keiner Feuchtigkeit oder Wasser ausgesetzt werden.
- 20  **Vorsicht:** Bei der Innenraummontage des Gateway-Geräts ist darauf zu achten, dass es in einer staubfreien Umgebung installiert wird. Es sollte ein Installationsort gewählt werden, an dem die Ports am Gateway-Gerät gut zugänglich sind, um das Anschließen und Abtrennen von Kabeln zu erleichtern und den freien Blick auf die LEDs zu ermöglichen.
- 21 **Achtung:** Die Stromquelle für die Gateway-Einheit sollte sich in ihrer Nähe befinden und leicht zugänglich sein.
- 22  **Vorsicht:** Zur Gewährleistung der erforderlichen Kühlung des Gateway-Geräts ist darauf zu achten, dass der Luftfluss um die Einheit und über seine an der Rückseite befindlichen Kühlrippen nicht behindert wird.
- 23 Stromkreisüberlastung: Der Anschluss der Ausrüstung an den Versorgungsstromkreis und die möglichen Auswirkungen der Überlastung von Schaltkreisen auf den Überstromschutz und die Versorgungskabel sollten erwogen werden. In diesem Zusammenhang sollten auch die auf dem Typenschild der Ausrüstung angegebenen Nennwerte entsprechend berücksichtigt werden.
- 24 **Vorsicht:** Beim Ersetzen der Batterie durch einen inkorrekten Typ besteht Explosionsgefahr. Die Batterie sollte nur durch denselben oder einen gleichwertigen, vom Hersteller empfohlenen Typ ersetzt werden. Die Batterien sind gemäß der Anleitungen des Herstellers zu entsorgen.
- 25 **Achtung:** Bei einem zentralisierten Gleichstromanschluss darf die Installation nur in einem Bereich mit gesichertem Zugang erfolgen.

- 26 Bei der Versorgung der Einheit durch zentralisierten Gleichstrom ist ein Tray-Kabel zum Anschluss der Stromquelle erforderlich. Das Tray-Kabel muss ein UL-gelistetes Typ-TC-Tray-Kabel mit einer Nennspannung von 600 V und einer Nenntemperatur von 90 Grad Celsius, mit drei Leitern und mindestens 14 AWG sein.
- 27 **Achtung:** Bei der Rackmontage der Ausrüstung ist darauf zu achten, dass keine Gefahrenbedingung durch ungleichmäßige mechanische Belastung geschaffen wird.
- 28  **Achtung:** Vor dem Installieren oder Ausbauen einer Leitungskarte in das bzw. aus dem Chassis einer eingeschalteten Einheit ist aller metallischer Schmuck wie zum Beispiel Ringe oder Uhren zu entfernen.
- 29 Zur zuverlässigen Stromversorgung des Geräts sollte ein dedizierter Stromkreis oder Netzfilter und Stabilisator (Power Conditioner) verwendet werden.
- 30 **Achtung:** Das Chassis kann schwer und schwierig zu heben sein. Allied Telesyn empfiehlt, bei der Rackmontage des Chassis Hilfspersonal heranzuziehen.
- 31  **Achtung:** Sehen Sie nicht direkt auf die Enden der Faseroptikkabel und inspizieren Sie die Kabelenden nicht mit einer optischen Linse.
- 32  **Achtung:** An dieser Einheit kann mehr als ein Stromkabel vorhanden sein. Vor Wartungsarbeiten sollten zur Reduzierung des Stromschlagrisikos alle Stromkabel abgetrennt werden.
- 33 **Achtung:** Das Installieren und der Austausch dieser Ausrüstung ist nur ausgebildetem und qualifiziertem Personal gestattet.
- 34 **Achtung:** Der Stromeingang darf nur über eine SELV-Quelle gemäß IEC 60950 erfolgen. Eine zentralisierte Gleichstrom-Batteriebank darf nicht angeschlossen werden.
- 35 UL-anerkannte Kabel mit mindestens 18 AWG sollten vom Installateur bereitgestellt werden.
- 36 UL-anerkannte Kabel mit mindestens 22 AWG sollten vom Installateur bereitgestellt werden.
- 37 **Vorsicht:** Die Stromversorgung des Hub darf nur über den Adapter erfolgen.
- 38 Bei der Installation in einer geschlossenen oder einer mehrere Einheiten umfassenden Anordnung kann die Temperatur der Betriebsumgebung die Raumtemperatur übersteigen. Es sollte deshalb darauf geachtet werden, dass die Ausrüstung in einer Umgebung installiert wird, die der maximalen Nennumgebungstemperatur (T_{mra}) des Herstellers entspricht.
- 39 **Vorsicht:** Beim Installieren der Ausrüstung in einem Rack ist darauf zu achten, dass der für den sicheren Betrieb der Ausrüstung erforderliche Luftfluss nicht beeinträchtigt wird.
- 40  **Achtung:** Es sollte eine zuverlässige Erdung der rackmontierten Ausrüstung aufrechterhalten werden. Andere Versorgungsleitungen als direkte Verbindungen zu den Zweigschaltungen (z. B. Verwendung von Verlängerungskabeln) sollten besonders sorgfältig erwogen werden.


Telekommunikationskonformitätshinweise

- 41  **Achtung:** Bei der Verwendung Ihrer Telefonausrüstung sollten zur Reduzierung der Brand-, Stromschlag und Verletzungsgefahr stets grundsätzliche Sicherheitsrichtlinien, einschließlich der folgenden, befolgt werden:



Verwenden Sie dieses Produkt nicht in der Nähe von Wasser, zum Beispiel in der Nähe einer Badewanne, einer Waschschüssel, eines Spülbeckens, eines Waschbottichs, in einem nassen Kellerraum oder in der Nähe eines Schwimmbads.

Vermeiden Sie die Verwendung eines Telefons (mit Ausnahme eines schnurlosen Typs) während eines Gewitters. Es könnte eine geringfügige Blitzschlaggefahr bestehen.







Verwenden Sie das Telefon nicht, um das Austreten von Gas zu melden, wenn es sich in der Nähe dieser Gefahrenquelle befindet.


- 42  **Achtung:** Vergewissern Sie sich vor dem Anschluss der Telefonports (TEL) am Gateway-Gerät, dass die Verbindung des Gebäudes zum öffentlichen Telefonnetz (PTSN) unterbrochen ist.
- 43 **Achtung:** Verwenden Sie zur Reduzierung der Brandgefahr nur Telekommunikationsleitungskabel Nr. 26 AWG oder stärkeres Kabel.








Avisos de seguridad láser





- 1  **Atención:** Producto láser de clase 1.
- 2  **Atención:** No mire el rayo láser.

Avisos de seguridad eléctricas



- 3  **Atención:** Para evitar la electrocución, no quite la tapa. La unidad no contiene piezas que pueda reparar el usuario. Esta unidad contiene tensiones peligrosas y sólo la debe abrir un técnico convenientemente formado y cualificado. Para evitar todo riesgo de electrocución, desconecte la alimentación eléctrica del producto antes de conectar o desconectar los cables de la LAN.
- 4  **Atención:** No manipule el equipo ni los cables mientras haya rayos en la atmósfera.
- 5  **Atención:** El cable de alimentación se utiliza como dispositivo de desconexión. Para desactivar el equipo, desconecte el cable de alimentación.
- 6  **Atención:** Equipo de Clase I. Este equipo debe conectarse a tierra. La clavija de alimentación se debe enchufar a una toma eléctrica convenientemente conectada a tierra. El uso de una toma mal conectada podría provocar tensiones peligrosas en las piezas metálicas accesibles para el usuario.
- 7 El equipo requiere conexión. La toma eléctrica debe estar situada cerca del equipo y ser de fácil acceso.
- 8  **Precaución:** Las rejillas de ventilación no deben estar obstruidas y deben tener libre acceso al aire de la sala para facilitar la refrigeración.
- 9 **Atención:** Temperatura de funcionamiento. Este producto está diseñado para funcionar con una temperatura ambiente máxima de 40 °C.
- 10 Todos los países: Instale el producto de acuerdo con las recomendaciones de la normativa sobre instalaciones eléctricas de su país.
- 11  **Atención:** Como medida de seguridad, instale un disyuntor con un valor mínimo de 15 A entre el equipo y la toma de alimentación CC.

Conecte siempre los cables a los equipos de la LAN antes de conectarlos al disyuntor. No trabaje con cables activos para evitar el riesgo de lesiones físicas derivadas de una descarga eléctrica. Asegúrese siempre de que el disyuntor está en la posición desconectada antes de conectar los cables.
- 12  **Atención:** No pele más que la longitud recomendable de cable. Si se supera dicha longitud, puede producirse un riesgo al quedar cable al descubierto en el bloque de terminales después de la instalación.



- 13  **Atención:** Cuando instale el equipo, asegúrese de instalar primero la conexión a tierra del bastidor y de desconectarla en último lugar.
- 14  **Atención:** Compruebe si hay algún hilo de cobre al descubierto que proceda del cable instalado. Cuando la instalación se realiza correctamente, no debe quedar ningún hilo de cobre al descubierto fuera del bloque de terminales. Todo cable descubierto puede conducir un nivel peligroso de electricidad a las personas que lo toquen.
- 15 Este sistema funciona con sistemas CC con conexión a tierra positiva y negativa.
- 16 **Atención:** Este equipo sólo debe ser instalado y manipulado por personal convenientemente formado y cualificado.
- 17  **Precaución:** Utilice los soportes de montaje que acompañan al dispositivo para montarlo en un muro.
- 18  **Precaución:** No instale el dispositivo expuesto a la luz solar directa ni en un lugar húmedo o con polvo.
- 19  **Precaución:** No exponga el dispositivo de puerta de enlace a la humedad o el agua.
- 20  **Precaución:** Si el dispositivo de puerta de enlace se instala en el exterior, asegúrese de que el entorno esté libre de polvo. El emplazamiento debe permitir un acceso fácil a los puertos del dispositivo de puerta de enlace. De esta forma, resultará fácil conectar y desconectar los cables y ver los indicadores LED.
- 21 **Atención:** La toma eléctrica de la unidad de puerta de enlace debe estar situada cerca de la unidad y ser de fácil acceso.
- 22  **Precaución:** Para permitir la refrigeración adecuada del dispositivo de puerta de enlace, asegúrese de no limitar la circulación de aire alrededor de la unidad ni a través de las aletas de refrigeración del radiador de la parte trasera.
- 23 Sobrecarga de circuitos: Tenga en cuenta la conexión del equipo al circuito de alimentación y el posible efecto de la sobrecarga de los circuitos en la protección contra excesos de corriente y en los cables de alimentación. Para ello, consulte los valores que se indican en la placa de características del equipo.
- 24 **Precaución:** Si la batería se sustituye por otra de tipo incorrecto, existe un peligro de explosión. Sustitúyala únicamente por otra batería del mismo tipo, o equivalente, recomendada por el fabricante. Deseche la batería de acuerdo con las instrucciones del fabricante.
- 25 **Atención:** En el caso de una conexión CC centralizada, instale la unidad en una zona de acceso restringido.
- 26 Utilice un cable de control para la conexión a la toma eléctrica si la unidad utiliza alimentación CC centralizada. El cable de control debe ser de tipo TC, figurar en la lista UL y tener una capacidad nominal de 600 V y 90 °C, con tres conductores y de un mínimo de 14 AWG.

- 27 **Atención:** Si el equipo se monta en un rack, se deberá evitar todo peligro de irregularidad en la carga mecánica.
- 28  **Atención:** Quítese todas las joyas metálicas, como anillos y relojes, antes de instalar o quitar una tarjeta de red de un chasis con alimentación eléctrica.
- 29 Utilice circuitos de alimentación dedicados o acondicionadores de alimentación para suministrar energía eléctrica fiable al dispositivo.
- 30 **Atención:** El chasis puede ser pesado y difícil de levantar. Allied Telesyn recomienda buscar ayuda para montar el chasis en un rack.
- 31  **Atención:** No mire directamente los extremos del cable de fibra óptica ni los inspeccione con una lente óptica.
- 32  **Atención:** Esta unidad puede tener más de un cable de alimentación. Para reducir el peligro de electrocución, desconecte todos los cables de alimentación antes de manipular la unidad.
- 33 **Atención:** Este equipo sólo debe ser instalado y manipulado por personal convenientemente formado y cualificado.
- 34 **Atención:** La alimentación sólo debe proceder de una toma SELV, conforme a la norma UEC 60950. No conecte la unidad a un banco centralizado de baterías CC.
- 35 El instalador debe suministrar cables que figuren en la lista UL de un mínimo de 18 AWG.
- 36 El instalador debe suministrar cables que figuren en la lista UL de un mínimo de 22 AWG.
- 37 **Precaución:** La alimentación del concentrador sólo debe proceder del adaptador.
- 38 Si la unidad se instala en un conjunto de rack cerrado o con varias unidades, la temperatura ambiente de funcionamiento del entorno del rack puede ser superior a la de la sala. El equipo se debe instalar en un entorno que no supere la temperatura ambiente nominal máxima (T_{mra}) indicada por el fabricante.
- 39 **Precaución:** La instalación en un rack debe realizarse de forma que se garantice el caudal de aire necesario para el buen funcionamiento del equipo.
- 40  **Atención:** Se debe mantener en todo momento la fiabilidad de la conexión a tierra de los equipos montados en rack. Preste especial atención a las conexiones que no procedan directamente de los circuitos de bifurcación (por ej., regletas de conexión).







Avisos de conformidad de telecomunicaciones

- 41  **Atención:** Cuando utilice su equipo telefónico, deberá adoptar las siguientes precauciones de seguridad básicas para reducir el riesgo de incendio, descarga electrónica y lesiones:
- No utilice este producto en zonas húmedas; por ejemplo, cerca de una bañera, un lavabo o un fregadero, en un sótano húmedo o cerca de una piscina.
- Evite el uso de teléfonos no inalámbricos durante una tormenta eléctrica. a fin de evitar el riesgo de electrocución como consecuencia de un rayo.
- No utilice el teléfono para notificar una fuga de gas en las inmediaciones de la misma.
- 42  **Atención:** Antes de realizar la conexión a los puertos de telefonía (TEL) del dispositivo de puerta de enlace, asegúrese de desconectar la alimentación de la red telefónica conmutada pública (PSTN/RTC) de las instalaciones.
- 43 **Atención:** Utilice sólo cable de telecomunicación 26 AWG o superior para reducir el riesgo de incendio.









Avis de sécurité laser





- 1  **Avertissement:** Produit laser de classe 1.
- 2  **Avertissement:** Ne pas observer directement le rayon laser.

Avis de sécurité électrique



- 3  **Avertissement:** Pour éviter tout risque d'électrocution, ne pas déposer le capot. L'appareil ne contient aucun composant réparable par l'utilisateur. Il est exposé à des tensions dangereuses et ne doit être ouvert que par un technicien compétent et qualifié. Pour éviter tout risque d'électrocution, débrancher l'alimentation électrique du produit avant de connecter ou de déconnecter les câbles de réseau local.
- 4  **Avertissement:** Ne pas travailler sur cet équipement ni sur ses câbles en présence de foudre.
- 5  **Avertissement:** Le cordon d'alimentation est utilisé en tant que mécanisme de déconnexion. Pour mettre l'équipement hors tension, débrancher le cordon d'alimentation.
- 6  **Avertissement:** Équipement de classe I. Cet équipement doit être mis à la terre. La prise d'alimentation doit être branchée sur une sortie d'alimentation correctement mise à la terre. Dans le cas contraire, les pièces métalliques accessibles risquent d'être soumises à des tensions dangereuses.
- 7 Équipement à connecter. La prise d'alimentation doit se situer à proximité de l'équipement et être facilement accessible.
- 8  **Attention:** Les orifices de ventilation doivent rester libres de toute obstruction pour pouvoir assurer le refroidissement par l'air de la pièce.
- 9 **Avertissement:** Température de fonctionnement. Ce produit a été conçu pour fonctionner à une température ambiante maximum de 40° C.
- 10 Dans tous les pays: installer le produit conformément aux réglementations électriques nationales et locales.
- 11  **Avertissement:** Par mesure de sécurité, installer un coupe-circuit d'une intensité minimum de 15 ampère entre l'équipement et la source d'alimentation en courant continu.

Toujours connecter les fils à l'équipement de réseau local avant de les raccorder au coupe-circuit. Ne pas travailler sur des composants d'alimentation CHAUDS pour éviter tout risque d'accident corporel par électrocution. Toujours s'assurer que le coupe-circuit est DÉSACTIVÉ avant de connecter les fils au coupe-circuit.



- 12  **Avertissement:** Respecter les recommandations pour dénuder les fils. Un dénudage excessif risque de présenter des risques pour la sécurité en laissant le fil exposé sur le bornier après l'installation.
- 13  **Avertissement:** Lors de l'installation de cet équipement, toujours s'assurer que la connexion de terre de la structure est installée en premier et déconnectée en dernier.
- 14  **Avertissement:** Vérifier la présence de fils de cuivre exposés sur le câble d'installation. Si l'installation a été correctement réalisée, aucun fil de cuivre sortant du bornier ne doit être exposé. Tout fil exposé peut exposer les personnes qui y touchent à une tension dangereuse.
- 15 Ce système fonctionne avec les mécanismes c.c. de mise à la terre négative ou positive.
- 16 **Avertissement:** Seul le personnel qualifié et compétent est autorisé à installer ou à remplacer cet équipement.
- 17  **Attention:** Les supports de montage fournis doivent être utilisés pour fixer l'équipement au mur.
- 18  **Attention:** Ne pas installer l'équipement au soleil, ni dans un endroit humide ou poussiéreux.
- 19  **Attention:** Ne pas exposer le périphérique servant de passerelle à l'eau ou l'humidité.
- 20  **Attention:** Si le périphérique servant de passerelle est installé à l'intérieur, s'assurer qu'il se trouve dans un endroit non poussiéreux. Le site doit offrir un accès aisé au port du périphérique servant de passerelle afin de faciliter la connexion et la déconnexion des câbles, tout en permettant d'observer aisément les voyants.
- 21 **Avertissement:** La source d'alimentation d'une unité servant de passerelle doit se situer à proximité de l'unité et rester facilement accessible.
- 22  **Attention:** Pour permettre le refroidissement correct de l'unité servant de passerelle, s'assurer que l'air circule librement autour de l'unité et à travers les ailettes du dissipateur thermique à l'arrière.
- 23 Surcharge du circuit: En connectant l'équipement au circuit d'alimentation, tenir compte des répercussions éventuelles d'une surcharge du circuit sur la protection contre les surcharges et le câblage d'alimentation. Tenir compte des valeurs nominales indiquées sur la plaque signalétique de l'équipement.
- 24 **Attention:** Le remplacement de la batterie par une batterie de type incorrect peut provoquer un danger d'explosion. La remplacer uniquement par une batterie du même type ou de type équivalent recommandée par le constructeur. Les batteries doivent être éliminées conformément aux instructions du constructeur.
- 25 **Avertissement:** Pour une connexion d'alimentation c.c. centralisée, installer uniquement dans un emplacement d'accès limité.

- 26 Un chemin de câble doit être utilisé pour la connexion à la source d'alimentation si l'unité est alimentée par alimentation c.c. centralisée. Le chemin de câble doit être de type TC agréé UL, intensité nominale de 600 V, 90 °C, trois conducteurs, 14 AWG minimum.
- 27 **Avertissement:** L'installation de l'équipement sur un rack doit se faire sans provoquer de danger par un chargement mécanique déséquilibré.
- 28  **Avertissement:** Retirer les bijoux en métal, tels que les bagues et les montres, avant d'installer ou de retirer une carte d'un châssis sous tension.
- 29 Utiliser des circuits d'alimentation ou des unités de conditionnement dédiés pour fournir une alimentation électrique fiable à l'équipement.
- 30 **Avertissement:** Le châssis peut être lourd et difficile à soulever. Allied Telesyn recommande de demander de l'aide pour installer le châssis dans un rack.
- 31  **Avertissement:** Ne pas observer directement l'extrémité des câbles en fibres optiques ou les inspecter à l'aide d'un objectif optique.
- 32  **Avertissement:** Cette unité peut être équipée de plusieurs cordons d'alimentation. Pour réduire les risques d'électrocution, débrancher tous les cordons d'alimentation avant de procéder à la maintenance de l'unité.
- 33 **Avertissement:** Seul le personnel qualifié et compétent est autorisé à installer ou à remplacer cet équipement.
- 34 **Avertissement:** L'alimentation doit être fournie par une source SELV uniquement, conformément à la norme IEC 60950. Ne pas connecter à une rangée de batteries c.c. centralisée.
- 35 L'installateur doit fournir des fils de 18 AWG agréés UL.
- 36 L'installateur doit fournir des fils de 22 AWG agréés UL.
- 37 **Attention:** Le concentrateur doit uniquement être alimenté par l'adaptateur.
- 38 Si l'équipement est installé dans un rack fermé ou à plusieurs unités, la température ambiante de fonctionnement du rack risque d'être supérieure à la température ambiante de la pièce. Il convient d'en tenir compte avant d'installer l'équipement dans un environnement conforme à la température ambiante maximum du constructeur.
- 39 **Attention:** Réduction de la circulation d'air: l'installation de l'équipement dans un rack ne doit pas compromettre la circulation d'air requise pour son fonctionnement sécurisé.
- 40  **Avertissement:** Une terre fiable doit être maintenue sur l'équipement en rack. Faire plus particulièrement attention aux connexions d'alimentation autres que les connexions directes sur les circuits de dérivation (par ex. utilisation de barrettes d'alimentation).







Télécommunications – Avis de conformité


- 41  **Avertissement:** Les précautions élémentaires de sécurité doivent être systématiquement respectées en utilisant l'équipement téléphonique pour réduire les risques d'incendie, d'électrocution et d'accident corporel, notamment:
- Ne pas utiliser ce produit près d'une source d'eau, telle qu'une baignoire, un lavabo, un évier ou un baquet dans un sous-sol humide ou près d'une piscine.
- Éviter d'utiliser le téléphone (autre que sans fil) en présence de foudre pendant un orage. La foudre peut entraîner un léger risque d'électrocution.
- Ne pas utiliser le téléphone pour signaler une fuite de gaz à proximité de la fuite.
- 42  **Avertissement:** Avant de connecter les ports téléphoniques (TEL) sur le périphérique servant de passerelle, veiller à déconnecter les alimentations RTPC (réseau téléphonique public commuté) du local.
- 43 **Avertissement:** Pour réduire les risques d'incendie, utiliser uniquement un cordon de télécommunication n° 26 AWG ou supérieur.








Indicazioni sulla sicurezza laser





- 1  **Avvertenza:** Prodotto laser Classe 1.
- 2  **Avvertenza:** Non fissare il raggio laser.

Indicazioni sulla sicurezza elettrica



- 3  **Avvertenza:** Per evitare scosse elettriche, non rimuovere la copertura. All'interno non sono presenti componenti utilizzabili dall'utente. Questa unità presenta voltaggi rischiosi e deve essere aperta solo da un tecnico qualificato ed esperto. Per eliminare il rischio di scosse elettriche, scollegare il cavo di alimentazione del prodotto prima di collegare o scollegare i cavi della rete locale LAN.
- 4  **Pericolo:** Non utilizzare l'apparecchiatura o maneggiare i cavi in caso di lampi.
- 5  **Attenzione:** Il cavo di alimentazione viene utilizzato come dispositivo di scollegamento. Per togliere la corrente all'apparecchiatura, scollegare il cavo di alimentazione.
- 6  **Attenzione:** Apparecchiatura Classe I. Questa apparecchiatura deve essere messa a terra. Il cavo di alimentazione deve essere collegato a un socket correttamente cablato e messo a terra. Un socket non correttamente cablato potrebbe trasferire voltaggi pericolosi su componenti di metallo accessibili.
- 7 Apparecchiatura cablata. Il socket deve essere installato accanto all'apparecchiatura e deve essere facilmente accessibile.
- 8  **Attenzione:** Le prese d'aria non devono essere ostruite e devono avere libero accesso all'aria dell'ambiente per raffreddare l'apparecchiatura.
- 9 Temperatura di esercizio. Questo prodotto è progettato per una temperatura ambiente massima di 40°C.
- 10 Per tutti i paesi: Installare il prodotto in conformità con le normative sull'elettricità locali e nazionali.
- 11  **Avvertenza:** Per precauzione, installare un salvavita con un valore minimo di 15 ampere tra l'apparecchiatura e la fonte di alimentazione CC.

Collegare i cavi all'apparecchiatura LAN prima di collegarli al salvavita. Per evitare il rischio di danni fisici causati da scosse elettriche, non utilizzare l'apparecchiatura ad alte temperature. Verificare che il salvavita sia in posizione OFF prima di collegare i cavi.
- 12  **Avvertenza:** Non scollegare più cavi di quelli raccomandati: può essere pericoloso lasciare dei cavi esposti sul blocco terminale dopo l'installazione.



- 13  **Avvertenza:** Quando si installa l'apparecchiatura, verificare che il collegamento di messa a terra FG (frame ground) sia installato per primo e disinstallato per ultimo.
- 14  **Avvertenza:** Verificare che non sporgano fili di rame dai cavi installati. Se l'installazione viene effettuata correttamente, non vi sono fili di rame scoperti, sporgenti dal blocco terminale. Gli eventuali fili scoperti possono condurre livelli di elettricità dannosi sulle persone che li toccano.
- 15 Questa apparecchiatura funziona con sistemi CC con messa a terra a polarità positiva o negativa.
- 16 **Avvertenza:** Solo personale esperto e qualificato può installare o sostituire l'apparecchiatura.
- 17  **Attenzione:** Per un montaggio a muro sicuro del dispositivo, è necessario utilizzare i supporti di montaggio forniti in dotazione.
- 18  **Attenzione:** Non installare il dispositivo in un luogo esposto alla luce solare, umido o polveroso.
- 19  **Attenzione:** Non esporre il dispositivo gateway all'umidità o all'acqua.
- 20  **Attenzione:** Se il gateway è installato in un ambiente chiuso, verificare che l'ambiente sia privo di polvere. Il sito di installazione dovrebbe disporre di un facile accesso alle porte del gateway. Questo vi consentirà di collegare e scollegare i cavi e visualizzare i LED in modo semplice.
- 21 **Avvertenza:** La fonte di alimentazione dell'unità gateway deve essere posizionata vicino all'unità, in un luogo facilmente accessibile.
- 22  **Attenzione:** Per consentire il raffreddamento appropriato del dispositivo gateway, verificare che il flusso d'aria attorno all'unità e attraverso le ventole di raffreddamento per la dispersione del calore poste sul retro non sia ostruito.
- 23 Sovraccarico del circuito: Prestare attenzione al collegamento dell'apparecchiatura al circuito di alimentazione e all'effetto che il sovraccarico dei circuiti potrebbe avere sulla protezione contro i sovraccarichi di corrente e sui cavi di alimentazione. In tal senso, tenere presente i valori riportati sull'etichetta dell'apparecchiatura.
- 24 **Attenzione:** Se si sostituisce la batteria con un tipo di batteria non corretto, si rischia di provocare un'esplosione. Sostituire la batteria solo con una dello stesso tipo o di un tipo equivalente raccomandato dal produttore. Eliminare le batterie usate secondo le istruzioni del produttore.
- 25 **Avvertenza:** In caso di alimentazione CC centralizzata, installare l'apparecchiatura solo in aree ad accesso limitato.
- 26 Se l'unità ha un'alimentazione CC centralizzata, è necessario un cavo di tipo TC approvato UL, valutato a 600 V e 90°C, con tre conduttori, di minimo 14 AWG.
- 27 **Avvertenza:** Il montaggio dell'apparecchiatura in rack deve essere effettuato in modo da evitare di provocare rischi dovuti a un carico meccanico irregolare.

- 28  **Avvertenza:** Rimuovere tutti gli oggetti di metallo, ad esempio anelli e orologi, prima di installare o estrarre una scheda di linea da un chassis acceso.
- 29 Utilizzare circuiti di alimentazione o alimentatori dedicati per fornire energia elettrica al dispositivo in modo affidabile.
- 30 **Avvertenza:** Il chassis potrebbe risultare pesante e scomodo da sollevare. Allied Telesyn consiglia di richiedere assistenza per il montaggio del chassis in rack.
- 31  **Avvertenza:** Non osservare le estremità dei cavi a fibre ottiche direttamente oppure attraverso una lente ottica.
- 32  **Avvertenza:** Questa unità potrebbe disporre di più cavi di alimentazione. Per ridurre il rischio di scosse elettriche, scollegare tutti i cavi di alimentazione prima di iniziare la manutenzione dell'unità.
- 33 **Avvertenza:** Solo personale esperto e qualificato può installare o sostituire l'apparecchiatura.
- 34 **Avvertenza:** L'alimentazione deve essere fornita da una fonte SELV, come specificato nello standard IEC 60950. Non collegare il dispositivo a una batteria CC centralizzata.
- 35 I cavi riconosciuti UL di minimo 18 AWG non sono forniti in dotazione.
- 36 I cavi riconosciuti UL di minimo 22 AWG non sono forniti in dotazione.
- 37 **Attenzione:** L'hub deve essere alimentato solo mediante l'adattatore.
- 38 Se l'installazione è posizionata in un ambiente chiuso o in rack multi-unità, la temperatura operativa del rack potrebbe essere maggiore della temperatura ambiente. Per questo motivo, installare l'apparecchiatura in un ambiente compatibile con la temperatura ambiente massima stimata dal produttore (T_{mra}).
- 39 **Attenzione:** L'installazione dell'apparecchiatura in rack dovrebbe essere effettuata in modo che il flusso d'aria richiesto per un funzionamento sicuro non venga compromesso.
- 40  **Attenzione:** È necessario mantenere la messa a terra dell'apparecchiatura montata in rack. Prestare particolare attenzione ai collegamenti di alimentazione non CC ai circuiti periferici (ad esempio all'uso dei cavi di alimentazione).







Indicazioni per la conformità con le norme sulle telecomunicazioni


- 41  **Avvertenza:** Quando si utilizza l'apparecchiatura telefonica, per ridurre il rischio di incendio, scosse elettriche e danni alle persone, è necessario seguire alcune precauzioni di base per la sicurezza, ad esempio:
- Non utilizzare il prodotto in prossimità di acqua, ad esempio, vicino a vasche da bagno, lavabi, lavandini, piscine oppure in ambienti umidi.
- Non utilizzare un telefono (di tipo non cordless) durante un temporale: esiste il rischio remoto che i lampi provochino scosse elettriche.
- Per segnalare una perdita di gas, non utilizzare il telefono in prossimità della perdita.
- 42  **Avvertenza:** Prima di utilizzare le porte per il collegamento telefonico (TEL) del dispositivo gateway, verificare che la rete telefonica pubblica (PSTN) sia disconnessa.
- 43 Per ridurre il rischio di incendi, utilizzare solo un cavo di linea telefonica di 26 AWG o superiore.








Лазерная безопасность





- 1  **Внимание:** лазерный продукт, класс 1.
- 2  **Внимание:** Не смотрите прямо в лазерный луч.

Электрическая безопасность



- 3  **Внимание:** Для предотвращения электрического шока, не снимайте кожух. Внутри нет частей, подлежащих обслуживанию пользователем. Это устройство – под опасным напряжением и должно открываться только обученным и квалифицированным инженером. Для избежания возможности поражения электрическим током, отсоедините питание перед соединением или отсоединением сетевых кабелей LAN.
- 4  **Внимание:** Не работайте с оборудованием во время грозы.
- 5  **Внимание:** Кабель питания используется для отсоединения. Для отсоединения оборудования, отсоедините кабель питания.
- 6  **Внимание:** Оборудование Класса I. Это оборудование должно быть заземлено. Вилка питания должны быть присоединена к соответствующим образом подключенному заземлению. Неправильное соединение может подвергнуть доступные металлические части действию опасного напряжения.
- 7 Розетки. Розетка должна быть установлена недалеко от оборудования и должна быть легко доступной.
- 8  **Предостережение:** Вентиляционные отверстия не должны быть заблокированы и должен быть свободный доступ к воздуху в комнате для охлаждения.
- 9 **Внимание:** Рабочая температура. Этот продукт предусмотрен для температуры окружающего воздуха не выше + 40° C.
- 10 Во всех странах: Инсталлируйте продукт в соответствии с национальными нормами электротехники.
- 11  **Внимание:** Для безопасности установите прерыватель для максимальной силы тока 15 ампер между оборудованием и источником постоянного тока.

Всегда подсоединяйте провода к сетевому оборудованию (LAN) перед тем, как присоединять кабели к прерывателю. Не работайте с кабелями под напряжением, чтобы избежать поражения электротоком. Перед присоединением проводов к прерывателю, убедитесь, что прерыватель находится в положении ВЫКЛ (OFF).
- 12  **Внимание:** Не очищайте от изоляции провод больше, чем рекомендовано. Чрезмерное очищение кабеля может составлять опасность после инсталляции.

- 13  **Внимание:** При инсталляции оборудования, убедитесь, что заземление подключается в первую, а отключается в последнюю очередь.
- 14  **Внимание:** Проверьте, нет ли на инсталлированных проводков на кабеле. При правильной инсталляции на терминале свободных проводков быть не должно. Открытые провода могут представлять опасность электрического поражения тем лицам, которые прикасаются к проводам.
- 15 Эта система действует как с плюсовым, так и минусовым заземлением постоянного тока.
- 16 **Внимание:** Это оборудование должно быть инсталлировано только обученными и квалифицированным работниками.
- 17  **Предостережение:** Оборудование должно быть надежно прикреплено к стене с помощью скоб.
- 18  **Предостережение:** Не инсталлируйте на солнцепеке, во влажном или пыльном месте.
- 19  **Предостережение:** Не подвергайте шлюзовую установку действию влажности или воды.
- 20  **Предостережение:** Если шлюзовая установка инсталлируется в помещении, позаботьтесь, чтобы в помещении не было пыли. Должен быть обеспечен легкий доступ к портам оборудования, чтобы Вам было легко соединять и отсоединять кабели и видеть светодиоды.
- 21 **Внимание:** Источник питания должен быть недалеко от установки, и к нему должен быть удобный доступ.
- 22  **Предостережение:** Для хорошей вентиляции шлюзовой установки, позаботьтесь, чтобы вокруг установки и через вентиляционные решетки мог свободно циркулировать воздух.
- 23 Перегрузка контура: Следует подумать о том, какое количество оборудования присоединяется к контуру питания и на возможный эффект перегрузки контуров на защиту перегрузки и провода питания. Следует обращать внимание на указанные предельные показатели на фабричных табличках.
- 24 **Литиевая батарея:** Должна заменяться только обученным и квалифицированным инженером.
- Предостережение:** Возможен взрыв при замене неправильным типом батареи. Заменяйте только тем же или эквивалентным типом, рекомендованным производителем. Утилизируйте использованные батареи только в соответствии с указаниями производителя.
- 25 **Внимание:** Для централизованного подсоединения постоянного тока, устанавливайте только в помещении, доступ к которому ограничен.

- 26 Для подсоединения источника питания, если установка питается централизованным постоянным током, требуется желобной кабель. Кабель должен быть признанным UL типа и предназначен для 600 В и + 90°C, с тремя кондукторами, минимум 14 AWG (американский калибр).
- 27 **Внимание:** Установка оборудования на раме должна быть такой, чтобы не создавалось опасности от неровной механической нагрузки.
- 28  **Внимание:** Снимите все механические украшения, кольца и часы, перед инсталляцией и удалением линейной карты с корпуса под напряжением.
- 29 Для надежного питания используйте отдельные контуры питания и выравниватели энергии.
- 30 **Внимание:** Корпус может быть тяжелым и поднять его может быть сложно. Allied Telesyn рекомендует, что при установке корпуса на раме Вам необходимо обеспечить соответствующую помощь.
- 31  **Внимание:** Не смотрите прямо на торцы волоконно-оптического кабеля и не inspectируйте торцы кабеля с помощью оптической линзы.
- 32  **Внимание:** Установка может быть оборудована несколькими проводами питания. Перед техническим обслуживанием установки, отсоедините все провода питания.
- 33 **Внимание:** Оборудование должно обслуживаться и заменяться только обученными и квалифицированными работниками.
- 34 **Внимание:** Питание должно подаваться только от источника SELV, в соответствии с IEC 60950. Не подключайте к централизованному блоку аккумуляторов постоянного тока.
- 35 Инсталлятор должен обеспечивать провода, признанные UL, минимум 18 AWG.
- 36 Инсталлятор должен обеспечивать провода, признанные UL минимум 22 AWG.
- 37 **Предостережение:** Питание на узел должно подаваться только с адаптера.
- 38 При монтажке на раме с несколькими установками или в закрытом контуре, рабочая температура оборудования на раме может быть выше, чем температура окружающей среды. Поэтому следует позаботиться о том, чтобы температура не превышала максимальной температуры окружающей среды, указанной производителем (Tmra).
- 39 **Предостережение:** Уменьшенный воздушный поток: инсталляция оборудования на раме должна быть такой, чтобы не ограничивать циркуляцию воздуха, необходимую для безопасной работы оборудования.
- 40  **Внимание:** Оборудование на раме необходимо надежно заземлять. Особое внимание следует обращать на соединения питания, помимо прямых соединений к веткам контура (например, на розеточные блоки).

Телекоммуникационное соответствие

- 41  **Внимание:** При использовании телефонного оборудования, всегда следует обращать внимания на требования безопасности для снижения риска пожара, поражения током и ранения, в том числе:
- Не используйте оборудование рядом с водой – например ванной, раковиной или стиральным резервуаром или в мокром подвале рядом с бассейном.
- Во время электрической бури не используйте телефон (кроме беспроводного). Есть некоторый риск поражения от молнии.
- Не используйте телефон для сообщения об утечке газа вблизи от утечки.
- 42  **Внимание:** Перед соединения к телефонным портам (TEL) на шлюзовой установке, отсоедините городской телефон (PSTN) от помещения.
- 43 **Внимание:** Для снижения риска пожара, используйте коммуникационный кабель не меньше 26 AWG.

